THE OIL WEEKLY

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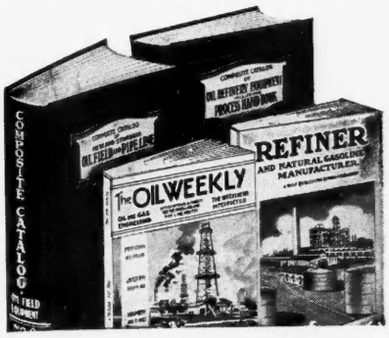

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The Oil Man's Calendar

SEPT. 4- 8	American Society of Mechanical Engineers, New York.
5	Oil Workers International Union, Hammond, Ind.
11-15	American Chemical Society, Boston, Mass.
13-15	National Petroleum Association, Atlantic City, N. J.
27-28	West Virginia Oil & Natural Gas Association, Charleston, W. Va.
OCT. 4- 6	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Galveston, Texas.
5- 7	Texas Mid-Continent Oil & Gas Association, Houston, Texas.
9-10	American Gas Association Annual Convention, New York.
16-20	National Safety Congress, Atlantic City, N. J.
17	National Stripper Well Association, Fort Worth, Texas.
18-20	Independent Petroleum Association of America, Fort Worth, Texas.
19-20	A. I. M. E. Petroleum Division, Los Angeles.
NOV. 13-17	American Petroleum Institute, Stevens Hotel, Chicago.
15-17	American Institute of Chemical Engineers, Providence, R. I.
DEC. 4- 7	American Society of Mechanical Engineers, Philadelphia.
APR. 10-12	American Association of Petroleum Geologists, Chicago.
11-12	American Petroleum Institute, Eastern District, Division of Production, Columbus, Ohio.

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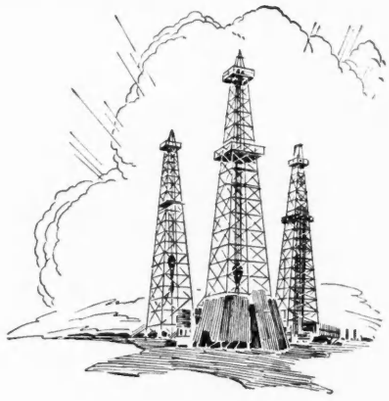

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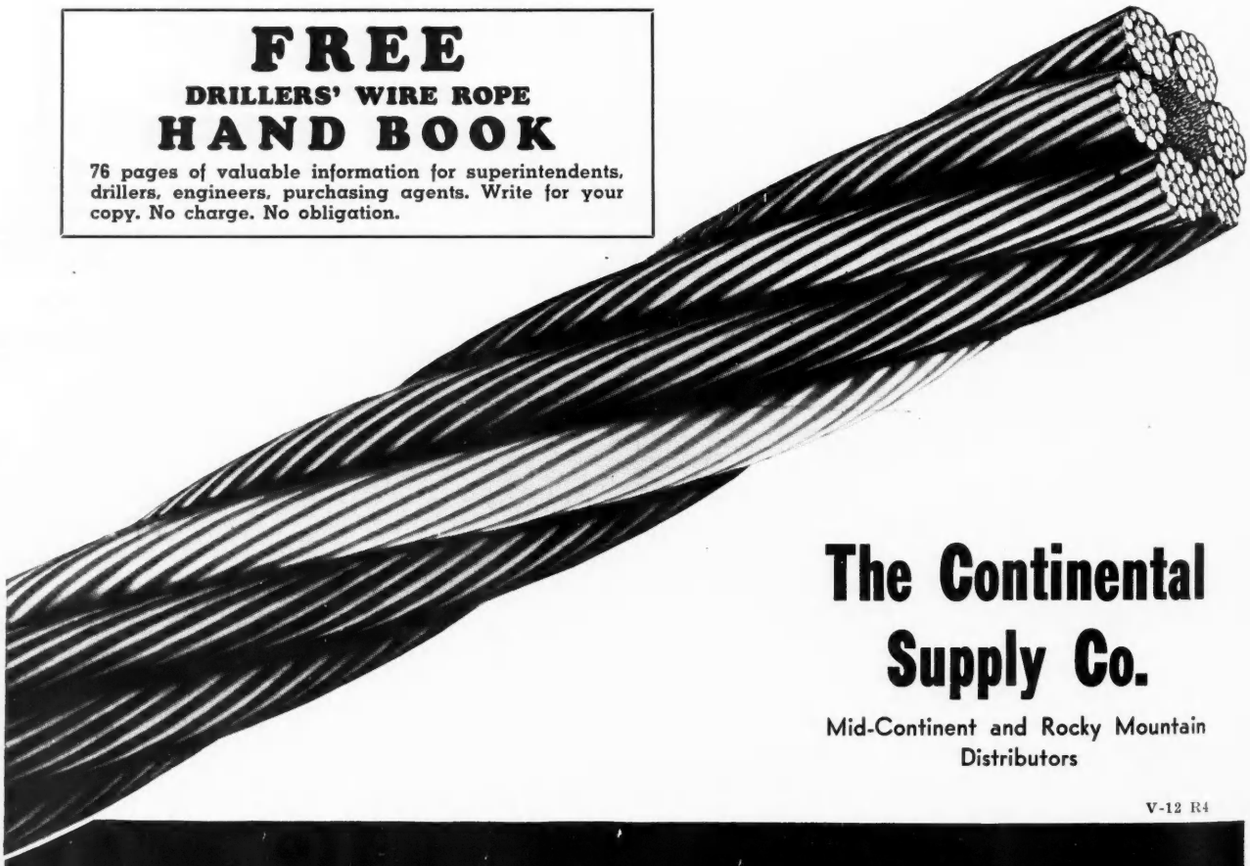

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THE OIL WEEKLY

AUGUST 21, 1939

VOLUME 94 NUMBER 11

The Week's Panorama

THE recent crude price cuts and the oil field shut-downs in the Mid-Continent soon will be history. But the causes that led to the unprecedented episode hardly can be expected to have vanished completely with the temporary halting of production.

When wells go back on production in September, the industry still will have its old problem of holding the supply of oil in a satisfactory relation to demand, regardless of what crude prices may be following the shut-downs.

September Allowables . . .

The immediate responsibility ahead, therefore, is that of determining and applying economically sound crude production allowables for September.

And apparently, there is need for close study of the allocations of the state allowables among the various fields. For there has been local under-market selling of crude in certain fields and districts; although there has not been, apparently, any material excess of overall production, as evidenced by withdrawals from crude storage and increased imports.

At any rate, this is the conclusion to be drawn from statements made in connection with the recent crude price cuts and from statistics having a bearing upon those statements.

It is indicated, therefore, that allowables have not been exactly as they should have been, and that re-allocations may be needed.

Recommendations . . . .

Several recommendations regarding allowables were made last week by a special committee of the Independent Petroleum Association of America, whose officials and directors met in Oklahoma City at the time of the meeting of the Interstate Oil Compact Commission.

Although the committee approved the shutting down of all producing wells as an emergency measure, it also recommended other moves aimed at giving the industry permanent stability.

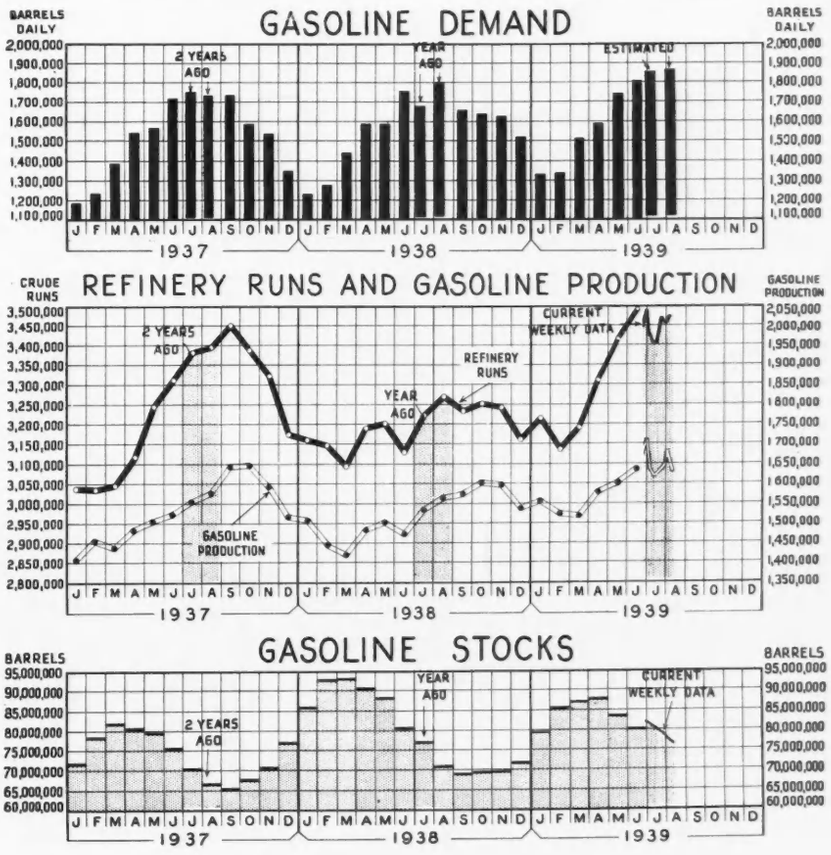
Several recommendations were directed to members of the Interstate Oil Compact Commission and to all state officials concerned with conservation of oil. Among those suggestions were the following:

1. That the Railroad Commission of Texas call a general meeting to which representatives of other oil producing states should be invited.

2. That after the 15-day shutdown period, production of crude oil should be held sufficiently below current consumption to permit the reduction of stocks of crude oil and products to proper working

Gasoline Output Lower and Stocks Reduced

Storage reduced 572,000 barrels in week before shutdowns of Mid-Continent oil fields; demand better than year ago.


GASOLINE DEMAND
BARRELS DAILY
2 YEARS AGO
YEAR AGO
ESTIMATED
REFINERY RUNS AND GASOLINE PRODUCTION
CRUDE RUNS
GASOLINE PRODUCTION
CURRENT WEEKLY DATA
REFINERY RUNS
GASOLINE PRODUCTION
GASOLINE STOCKS
BARRELS
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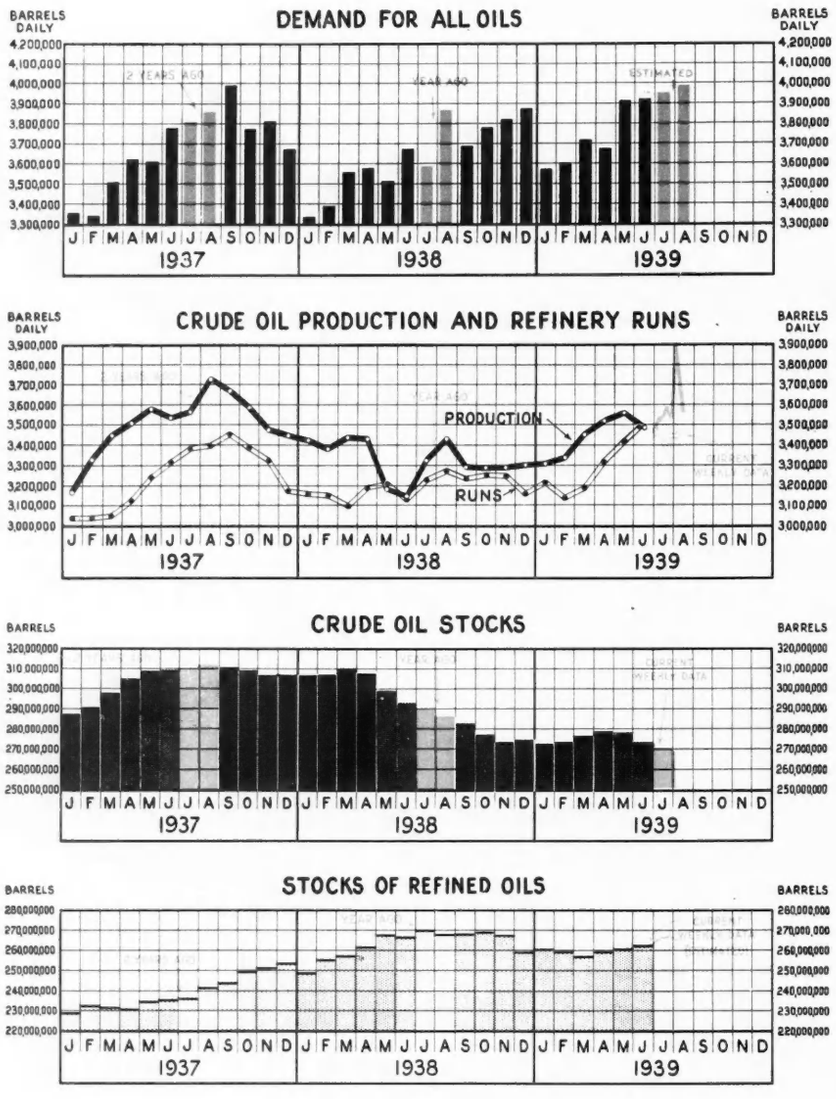
1937
1938
1939

Stocks Lower Than Year Ago; Demand Larger

Inventories of crude and products change little in week before shutdowns; crude output down; refinery runs up.


DEMAND FOR ALL OILS
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CRUDE OIL PRODUCTION AND REFINERY RUNS
PRODUCTION
RUNS
CRUDE OIL STOCKS
BARRELS
STOCKS OF REFINED OILS
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1937
1938
1939

levels and that production should be held thereafter to consumptive demand.

3. That regulatory officials ascertain whether any inequalities between oil fields exist in the quotas allowed to be produced, and that if any should be found, proper adjustments be made.

4. That all fields be surveyed by proper officials to see whether any physical waste is resulting from the prevailing rate of production, and if so, that production be reduced immediately to the proper level.

5. That production quotas, when set by the regulatory bodies, be strictly enforced, without change for a month after having been announced.

6. That definite maximum quotas or "top allowables" for fields be fixed, so as to prevent the drilling of unnecessary wells.

In General . . . . . .

In addition to the above suggestions to the conservation authorities, the IPAA committee offered several general recommendations, having advocated:

1. Enactment of a conservation statute by the state of Illinois, to end the present wasteful production of oil there.

2. Shut-down of imports of petroleum during the period of the shut-down of domestic fields, and reduction of imports in the same proportion that domestic production is reduced.

3. Reduction of the volume of oil processed by refiners, to bring about a reduction of the present excessive stocks of refined products.

Jobs Retained . . . . . .

Early fears that the Mid-Continent shut-downs would result in widespread unemployment soon were allayed. After the shut-downs commenced, it was indicated that less than 10 percent of the oil industry workers in the region would be thrown temporarily out of employment. The others were due to remain busy, repairing machinery, cleaning up properties, or painting; to stay on the pay-rolls at reduced wages; or to take vacations.

Employers as well as employees were able to brush aside fears as the shut-downs got under way.

For numerous banks announced that during the closings they would not insist upon the "strict terms" of commercial paper based on production of oil.

Back to 1919 Basis . . . .

Despite the shutting-off of about two thirds of the current normal production of crude, through the Mid-Continent shut-downs, the output that remains is equivalent to the regular production 20 years ago.

Areas not affected by the closings have been producing around 1,150,000 barrels daily. The total United States production averaged only 1,037,000 barrels daily in 1919.

Currently, about 30,000,000 automobiles and trucks are registered in the United States. At the end of 1919 there were only 7,565,446.

Under the Mid-Continent closings, California has become again the country's No. 1 oil producing state, a distinction held without benefit of exceptional circumstances in 1926.

Illinois, similarly, has jumped into second place.

Those two states together account for over 900,000 barrels daily production, California supplying over 600,000 and Illinois approximately 300,000. The remaining relatively small production of about 250,000 barrels daily left currently is in the Rocky Mountain and Eastern States and Michigan.

Conflicting Influences Upset Industry's Equilibrium

By L. J. LOGAN, Associate Editor

THE widely and hotly debated controversies that have attended the recent downward revision of crude prices and the consequential shutting in of production in six producing states, calls for a close study of the economic conditions prevailing in the industry at this time. Conflicting influences are reflected on every hand.

On one side is a situation in which the domestic industry finds itself confronted with: (1) a new economic problem consisting of a large and steadily increasing quantity of readily-available oil finding market connections with difficulty, a result of discovering more oil and completing more producing wells than economically desirable, which has created a condition tending to promote under-market selling; (2) increased imports of foreign produced petroleum; (3) a growth in the nation's own production; and (4) the failure to reduce gasoline stocks to the most desirable level.

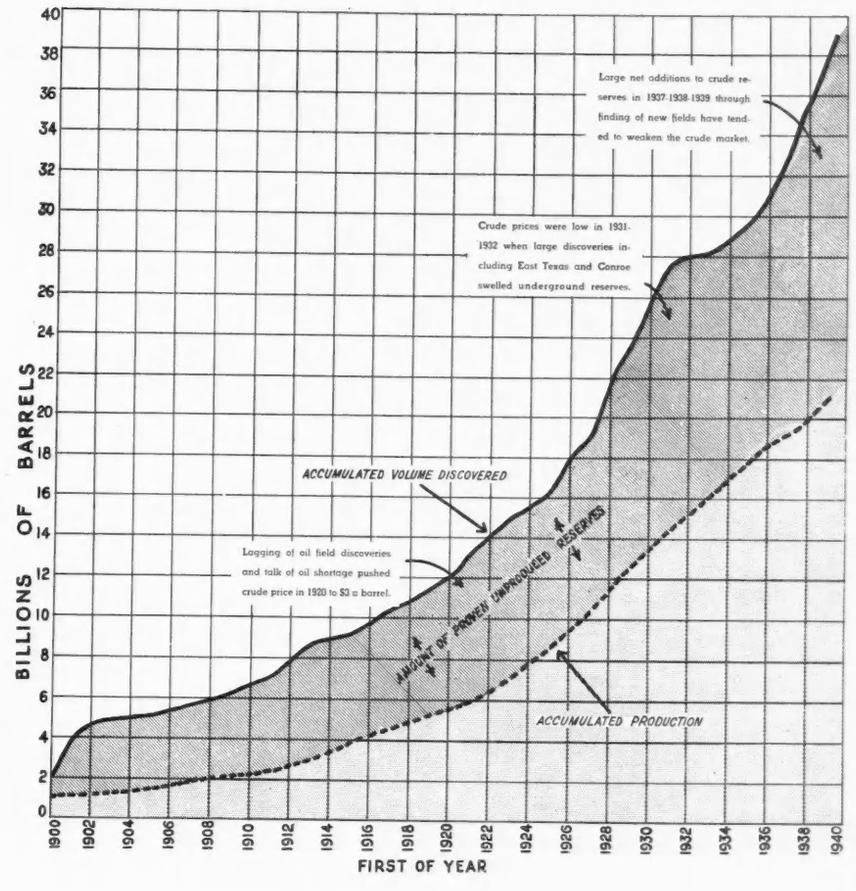
On the other hand are the following conditions: (1) no actual over-production exists because the combined stocks of all oils are lower, crude stocks are at a 15-year low, and gasoline stocks are only 1½ percent greater than a year ago; (2) gasoline demand is at an all-time peak, and is running 6 percent larger than last year, which should justify some growth in the volume of motor fuel held in storage; and (3) the relationship of gasoline and crude prices prior to recent crude cuts approximated levels prevailing in previous years.

Discovery Rates Disturbing

Dominating today's situation is the fact that oil is being found at faster rates than ever before, and is presenting the industry with an ever increasingly serious struggle against a mounting oversupply of available crude.

Of the 38½ billion barrels of oil that have been found since Drake's discovery, more than 9 billion, or 23.5 percent, has been found in the last 4 years. This sizeable growth in discovery rates has so far exceeded the increase in consumption that nearly 4½ billion barrels have been added to reserves during the period. This is equal to the quantity of oil produced in the same period.

Rapid expansion of discovery rates has carried crude oil reserves of the United States to the all-time



Flush New Fields Put Strain on Markets

Discovery of both record volumes of fields and barrels of oil has carried United States crude reserves to an all-time peak of 17-1/3 billion barrels. While the nation has found more oil than consumed with regularity, the spread has increased exceptionally rapidly in recent years as indicated on the accompanying graph. More than 9,000,000,000 barrels of oil have been discovered since January 1, 1935, whereas production has been but half this amount. This quantity in excess of actual needs has reached such proportions as to assume importance in the industry's economic picture. Crude reserves constitute the new method of storing oil.

Stocks of Crude Petroleum Year Ago and Now
(Thousands of barrels)

Grade or Origin	August 6, 1938	August 5, 1939	Percent Change from Year Ago
Pennsylvania Grade	6,114,000	5,654,000	— 7.5
Other Appalachian	1,407,000	1,234,000	—12.3
Lima-Michigan	1,317,000	2,042,000	+55.0
Illinois-Indiana	10,590,000	14,649,000	+38.3
Arkansas	2,960,000	3,372,000	+13.9
Kansas	6,242,000	6,204,000	— 0.6
Louisiana	13,912,000	14,000,000	+ 6.3
Northern	6,062,000	5,625,000	— 7.2
Gulf Coast	7,850,000	8,375,000	+ 6.7
New Mexico	8,186,000	5,511,000	—32.7
Oklahoma	81,127,000	70,424,000	—13.2
Texas	96,726,000	85,614,000	—11.5
East Texas	24,044,000	19,858,000	—17.4
West Texas	18,545,000	16,587,000	—10.5
Gulf Coast	19,052,000	20,890,000	+ 9.6
Other Texas	35,085,000	28,279,000	—19.4
Rocky Mountain	22,811,000	19,074,000	—16.4
California	32,798,000	38,485,000	+17.4
Foreign	3,216,000	2,719,000	—15.5
Total United States refinable	287,406,000	268,982,000	— 6.4
Heavy in California	17,723,000	14,365,000	—18.9

peak of 17-1/3 billion barrels, which constitutes 82 percent of the total quantity of oil produced in its history, and represents an amount equal to all the oil the country has produced since 1915.

New Wells a Problem

There has been a growing difficulty experienced in procuring market connections for new completions, although stocks are being reduced, as the consistently rising volume of available supply continues and as drilling activity has brought sizeable increases in newly finished producing wells. This condition would encourage producers to offer oil at less than posted prices in an effort to obtain market outlets.

It is not known just how large a volume has become involved, but no doubt it is considerable. Earlier in the year, when attention was called to this situation (THE OIL WEEKLY, February 20, 1939, page 11), it was estimated the volume ranged from 100,000 to 150,000 barrels daily.

Although drilling activity in the United States during the first 7 months of this year declined 5 percent under the 1938 level, it has been necessary to share the prevailing market with an additional 10,191 completed producing oil wells. In the same period production was increasing but 3.3 percent or 23,000,000 barrels, an amount that would average but 11 barrels daily for each new well.

Consequently, per-well allowables in most of the flush producing states have continued to drop steadily, as these newly finished oil-producing wells have sought their pro-rata share of the existing market. This is a trend that has been very much in evidence during the past several years. For example, Texas produced but 14.8 barrels per well in 1938 against 19.4 the previous year, when the number of wells on production increased from 77,300 to 85,477.

Herein lies one of the most acute problems confronting the industry. For per-well revenues are declining sharply, as producers receive both a smaller price and output. If this trend continues, there will be a time when it will be no longer profitable to drill new wells. In fact, some students of the situation asserted previous to the last crude-price reductions that the industry already had arrived at this point.

Stocks of Crude Oil in the United States Held by Various Companies in December, 1938, as Revealed at Texas Railroad Commission Hearing December 12, 1938

Current figures on stocks by companies are not available, but the stocks held at the close of last year by companies owning over half the United States total are herewith given.

COMPANY	Date	Crude Oil Stocks	Change of Crude Stocks from Year Before	Portion of Crude Stocks Regarded as Surplus
Humble Oil & Refining Co	12- 1-38	12,799,502	— 2,251,858	1,250,000
The Texas Corp	11- 1-38	25,320,216	+ 198,000	6,000,000
Sun Oil Co	12- 1-38	5,687,000	— 88,000	.....
Atlantic Refining Co	11-19-38	4,885,000	— 3,481,000	.....
Continental Oil Co	About 12- 1-38	9,000,000	.....	.....
Sinclair Refining Co	About 12- 1-38	15,000,000	.....	.....
Shell Petroleum Corp	11- 1-38	6,000,000	— 3,075,000	.....
Republic Oil & Refining Co	About 12- 1-38	800,000	.....	.....
Socony-Vacuum Oil Co. & Magnolia Pet. Co.	Forecast 12-31-38	26,795,000	— 5,759,000	7,500,000
Standard Oil Co. of Indiana	11- 1-38	38,056,365	— 6,639,655	19,000,000
Southport Petroleum Co	About 12- 1-38	400,000	.....	.....
Pure Oil Co	10- 1-38	4,107,859	+ 250,000	.....
Tide Water Associated Oil Co	About 12- 1-38	5,100,000	+ 499,859	1,500,000
Total 13 Companies	.....	153,950,942	—20,353,654	35,250,000

No Actual Overproduction

But despite the discovery of such huge volumes of oil, the 23,000,000-barrel growth of production in the first 7 months, the increase in imports, and the continued necessity of providing outlets for new completions, there has occurred no actual overproduction of oil due to the relatively strict control exercised by most of the leading states.

In fact, for the country as a whole, there has been an under-supply, as evidenced by the fact refiners have been processing not only all current output of the country's wells but also substantial quantities of storage crude.

Total stocks of all oils in the United States, both crude and refined products, at the end of June this year amounted to 556,559,000 barrels, or 27,000,000 barrels less than the 583,507,000 barrels on hand June 30, 1938. And, in view of the increased demand, current stocks represent only 142 days' supply in contrast with 159 days a year ago.

The bulk of the 27,000,000-barrel reduction in inventories within the past year was in crude stocks, but stocks of refined products came down 4,000,000 barrels also.

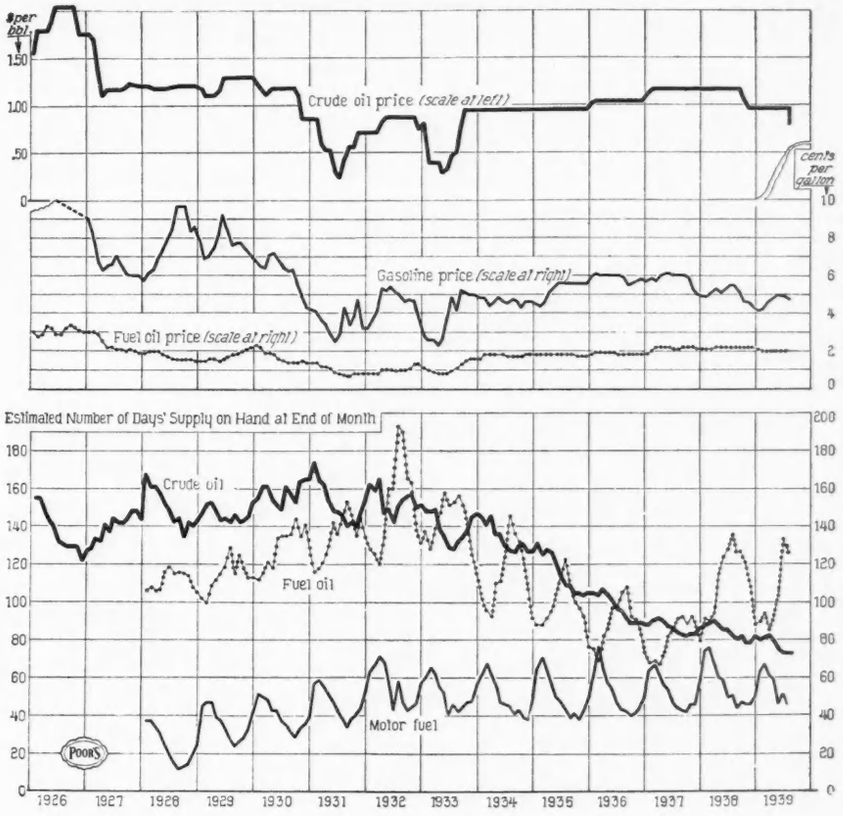
Crude Stocks at Low Level

The result is that both in actual quantity and in terms of days' supply, crude stocks are down to the lowest level for over 15 years. Since 1930 the crude-oil inventory situation has improved steadily, and the present stocks are not many millions of barrels in excess of the best economic operating level. At the end of July the crude inventory totaled 268,513,000 barrels, a decline of 16,516,000 barrels from a year

Crude Oil and Gasoline Prices Were Same As Under NRA

Dollar crude oil and 5-cent gasoline, which prevailed prior to recent general crude cut, represented almost same situation as under oil code in late 1933, 1934, and early 1935, when oil companies showed moderate profits. Under demoralized prices of 1931, losses were shown by practically all companies, and low prices of 1932 and early 1933 permitted only meager earnings.

(Charts from Poor's Industry and Investments Surveys)



Inventories Moderately Conservative

Current oil inventories are relatively conservative. Crude storage is at 17-year low, and stocks of gasoline and fuel oil are as small in relation to prevailing consumption as in some past years when prices of crude and products were fairly good.

previous. Over 3,000,000 barrels have been withdrawn from crude stocks during 1939.

Gasoline Stocks Only Slightly Higher

However, gasoline stocks are now about 1½ percent larger than at this time last year, which roughly amounts to 1,000,000 barrels. Somewhat offsetting this increase is the fact that demand is running about 5 percent higher, and consequently, the present inventory represents fewer days supply than did the quantity on hand a year ago.

The supply of gasoline in storage at the end of July 29 totaled 77,887,000 barrels, which is generally considered higher than economically desirable. However, in relation to demand gasoline stocks closely paralleled the end-of-July inventories of recent years, as shown below:

Comparative Gasoline Stocks

End of July	Days' Supply
1929	27
1930	32
1931	28
1932	58
1933	46
1934	45
1935	38
1936	39.4
1937	40.6
1938	43.6
1939 (Estimated)	42.5

These figures show that the gasoline inventory on hand at the end of July this year, relative to the prevailing consumption, was a little smaller than that on hand July 31 last year, although slightly larger than the end-of-July supplies in 1937, 1936 and 1935, when the average crude price was around or over $1 a barrel. But the end-of-July inventory was more conservative this year than in 1934, when $1 crude oil prevailed, and less than in 1933 and 1932 when the crude oil price was beneath $1.

In terms of days' supply at the prevailing rates of consumption, fuel oil stocks are about the same now as at this time last year, although smaller than in 1935, 1936, and 1937.

Imports Increase Materially

Contrasted with the stock situation has been the tendency for imports to increase. During the first 6 months of 1939, the quantity brought in for domestic consumption represented a gain of 2,359,000 barrels over the corresponding period of 1938. This gain of 16.2 percent represented a daily average of 93,304 barrels as compared with 80,271 the year previous.

The latest month for which figures are available, June of this year, shows a further growth in the size of imports. Importation of 3,946,000 barrels for do-

Stocks of Finished and Unfinished Gasoline One Year Ago and Now Virtually Unchanged

DISTRICT	August 13, 1938	August 13, 1939	Percent Change from Year Ago
East Coast	20,374,000	20,887,000	+ 2.5
Appalachian	3,129,000	3,332,000	+ 6.5
Indiana, Illinois, Kentucky	12,071,000	11,896,000	— 1.4
Oklahoma, Kansas, Missouri	6,425,000	6,394,000	— 0.5
Inland Texas	2,159,000	1,613,000	—25.3
Texas Gulf	9,303,000	8,769,000	— 5.7
Louisiana Gulf	2,711,000	2,042,000	—24.7
North Louisiana and Arkansas	517,000	514,000	— 0.6
Rocky Mountain	1,416,000	1,199,000	—15.3
California	12,522,000	14,143,000	+12.9
Reported	70,627,000	70,789,000	+ 0.2
Estimated Unreported	3,760,000	5,070,000	+ 3.5
Estimated United States Total	74,387,000	75,859,000	+ 0.2

Imports of Petroleum and Its Products Higher Than Year Ago

(Includes Only Quantity for Domestic Use)

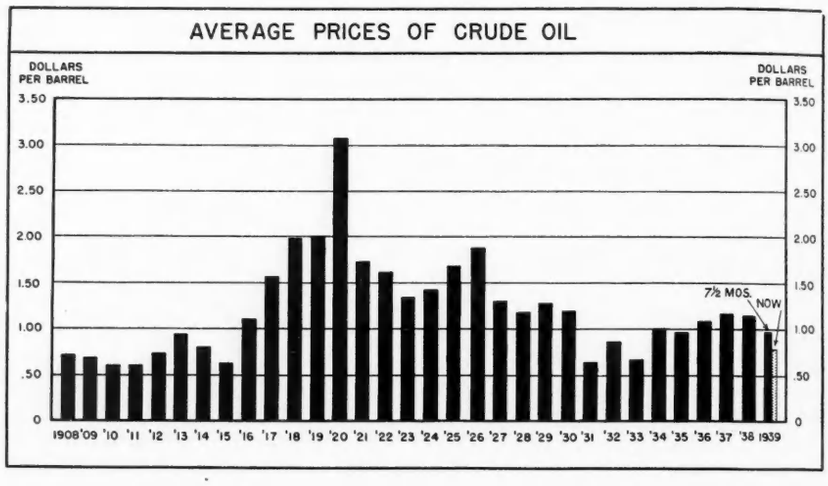
	FIRST SIX MONTHS			JUNE		
	1938	1939	Change	1938	1939	Change
Crude Oil	11,155,000	13,321,000	+19.4%	1,923,000	3,196,000	+66.2%
Refined Products	3,374,000	3,567,000	+ 5.7%	693,000	750,000	+ 8.2%
Total	14,529,000	16,888,000	+16.2%	2,616,000	3,946,000	+50.8%
Daily Average	80,271	93,304	+13,303	87,200	131,533	+44,333

Crude Prices Lowest in Five Years

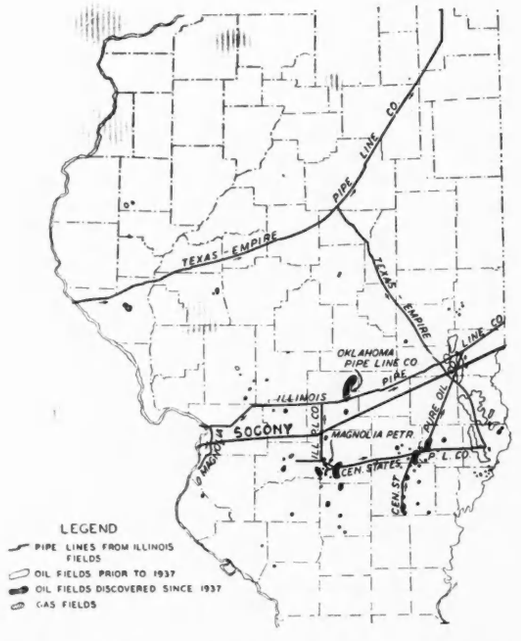
Before recent cut to about 80 cents a barrel, average crude price was around 98 cents, or nearly same as in 1934-1935. Price at the new level posted by some concerns is lower than in 1932, and not much better than in 1931 or 1933.

mestic use during June, 1939, represented a 50-percent increase over the 2,616,000 barrels of foreign oil consumed in the United States. On a daily average basis, it constituted a gain of 44,333 barrels in attaining 131,533 barrels—which is more oil than produced daily by New Mexico.

Crude oil constitutes the largest portion of the imports. During June imports of crude, for domestic use only, averaged 106,533 barrels daily, which was 42,433 barrels a day, or 66.2 percent, more than the average imports of 64,100 barrels per day in June of 1938.



Wide-Open Illinois Fields Affect Crude Market



Prominently mentioned as a factor in the marking down of crude prices was under-market selling and buying of oil in Illinois, where production goes unrestricted. Production in this state has risen from 5000 barrels daily early in 1937 to nearly 300,000 barrels per day. Close proximity to large consuming centers has prompted construction of important pipe line systems into the region, at the expense of the Mid-Continent which formerly supplied the oil.

After giving full consideration to the above factors there is nothing left in the industry's economic picture but the subject of relative prices and here are found some interesting comparisons.

Price Relationships

In the past, gasoline prices essentially the same as recent quotations have permitted crude prices similar to those that prevailed prior to the recent cut, and gasoline prices have been lower than at present when crude prices have dropped to or below the levels of the recently announced schedules.

An accompanying chart affords a long-range view of the relationship between prices and inventories.

Prior to the recent crude cut, the price of crude in the United States averaged about 98 cents a barrel, or approximately the same as in 1934 and 1935. The price of fuel oil is better now than in 1934 or 1935, while the price of gasoline is not as good as in 1935 although about the same as in 1934. Of course, the NRA code may have influenced crude prices in 1934.

Studying the chart further, it is found that when dollar-crude was attained in the latter part of 1933 under the NRA, following a period of greatly depressed prices of both crude and products, the price of gasoline rose approximately to the same level as that which now prevails; while fuel oil recovered but not to as high a level as now. In late 1933, therefore, when the industry was beginning to recover under the oil code, the price situation was closely similar to that which prevailed in the first 7½ months of this year.

Under the NRA code, there was sought and attained an average crude price of about $1 a barrel; and it was the aim to bring about a barrel price of

(Continued on page 61)

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As We See It . . .

SANE ACTION NECESSARY

NOW that the industry has had an orgy of its propensity to wash its linen in public, it is time for some sober thought. This is not the first time the linen has been brought out and its spots pointed out as being even blacker than they are. And to this disposition may be ascribed many of the ills that beset the oil industry in its relations with the public and with governmental authorities.

IT is not proposed here to say that the price cuts were or were not justified. Too much has been printed already on that subject, and far too much of what has been said was tinctured with impetuosity. And this at a time of crisis when clear thinking would best serve all concerned.

It is but natural that there should be upheaval in the industry to accompany any violent fluctuation in its basic price structure, but the industry cannot hope to change the situation by publicly screaming its wrath or placing its destiny in the hands of control agencies.

Had the control agencies been less precipitate in their turn in carrying the matter to the public, reason could have gathered with the parties around a conference table, and much that must now be undone could some way have been avoided.

IT must be apparent to any fair-minded man that something has been wrong with the oil business. With demand for its product at an all-time peak, the industry's financial statements have not revealed reasonable profits. Perhaps the control of production as claimed has had enough weak spots to permit some leaks—at least enough to give some buyers of crude an advantage. It is claimed that sufficient quantities of oil have been moving from certain quarters at price differentials low enough to undermine the general market structure. But, conservation boards are powerless in this, as there is no regulation that can force any producer, or group of producers, to maintain prices any more than can any legislation under the constitution force a buyer to buy or a seller to sell. Such transactions are of necessity controlled by mutual willingness of the parties.

UNDER the latter a producer might be justified in voluntarily closing his wells. Certainlv it is the right of the producer to stop delivering if he does not like the price that is offered. But there are those who point out that this is no cure, and as examples they tender the plowing-under of cotton and the killing of pigs. As is the case in all strikes, the method is more punitive than economic.

As has been said, it is not proposed here to adjudicate on this price question, but it must be admitted that the principal response, thus far, from within the industry has been expressions of general dissatisfaction, punctuated with public vituperation. Surely, sanity can produce a more constructive answer to the problem than that. The sooner the answer is found the better for all parties concerned. Agencies (including normally level-headed men) are available for handling such matters dispassionately. At least other industries can handle their internal affairs without calling in the whole public to misunderstand. The sooner the oil industry learns to do the same the sooner it will prosper.

MORE unfortunate, perhaps, than the loss of revenue, the discord and general upheaval is that this hiatus should occur at this time. Congress has just adjourned with the implied idea that the industry can handle its affairs under laws now existing. But an inquiry is coming up. It is sponsored by interests who can use this situation to good advantage in furthering the idea of federal control. Already demagogic utterances have come from high places in the state-control oligarchy—pleas for revenge; talk inspired by chagrin on the one hand and incited by ignorance on the other. The incident will have echoes long after the cause is forgotten.

Let's get sane about it—too much intemperate talk will not cure the situation, and it may make it worse.

—J.K.R.

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Summary of General Requirements and Nickel Alloy Steels Used in Construction of Oil-Production Equipment

PARTS	General Requirements: High Yield Strength in: Tension	Bending	Compression	Torsion	Shear	Resistance to: Fatigue	Shock	Wear	Galling or Seizing of Threaded Portions	Corrosion Fatigue	Depth of Hardening	STEELS
Drilling tools and accessories												
Bit bodies	..	..	..	..	X	X	X	..	X	..	..	Cast nickel-chromium and nickel-molybdenum steel
Bit and reamer cutters	..	..	..	..	..	..	X	X	..	..	..	SAE 3115, 4615, 2315
Cutter pins	..	..	X	..	X	..	..	X	..	..	..	Carburized SAE 3115, 4615, and 2315 Also oil-hardened SAE 3250, 4650, 3340
Reamer bodies	..	..	..	X	..	X	..	..	X	..	X	SAE X-3140; also SAE 3140 Cast nickel alloy steel sometimes used
Drill collars	X	X	..	X	..	X	..	..	X	..	X	SAE X-3140; also SAE 3140
Kellys	X	X	..	X	..	X	..	..	X	..	X	SAE X-3140; also SAE 3140
Tool joints	X	..	..	X	X	X	..	..	X	X	X	SAE X-3140; also SAE 3140
Fishing taps and dies	X	..	X	..	X	..	..	X	..	..	..	Carburized SAE 3115, 4615, 2315
Slips	X	..	X	..	X	..	X	X	..	..	..	Carburized SAE 3115, 4615, 2315
Rotary chain												
Side bars	X	..	..	..	..	X	X	X	..	..	..	SAE 3135, 3140
Connecting pins	..	X	X	X	X	X	X	X	..	..	..	Carburized SAE 2512 Oil-hardened SAE 3245
Bushings	..	..	X	..	..	X	X	X	..	..	..	Carburized SAE 2320
Drawworks												
Shafting	..	X	..	X	X	X	X	..	..	..	X	SAE X-3140, 3245, 3140
Brake rims	X	..	..	..	..	..	..	X	X	..	..	Cast nickel alloy steel
Brake bands	X	..	..	..	..	..	..	..	..	..	..	High carbon nickel-molybdenum steel
Sprockets	X	..	..	..	X	X	X	X	..	..	..	Cast nickel alloy steels
Rotary machines												
Shafting	..	X	..	X	..	X	..	..	..	..	X	SAE X-3140, 3245
Gears	..	..	X	..	X	X	X	X	..	..	..	Carburized SAE 2315, 2512 Oil-hardened SAE 3245
Crown and traveling blocks												
Bearings	..	..	X	..	..	X	X	X	..	..	..	Carburized SAE 3115, 4615
Pins	..	X	X	..	..	X	X	X	..	..	..	Carburized SAE 4615, 3130
Sheaves	..	X	X	..	..	X	X	X	..	..	..	Cast nickel alloy steel
Rotary swivels												
Bearings	..	..	X	..	..	X	X	X	..	..	..	Carburized "Krupp analysis"
Bail bolts	X	..	..	..	..	..	X	..	..	..	..	SAE 3245
Slush pumps												
Piston rods	..	X	..	..	..	X	X	X	X	..	..	SAE 3140, 3150, 2325 Carburized SAE 4615
Valve bodies and seats	..	..	X	..	X	X	X	X	..	..	..	Carburized SAE 4615, 3115
Cylinder liners	..	..	..	..	..	..	..	X	..	..	..	Carburized SAE 4615
Well-control equipment												
Blow-out preventers	X	..	..	..	..	..	X	..	..	..	..	Cast nickel alloy steels Forged SAE 3140
Drilling valves	X	..	..	..	..	..	X	..	..	..	..	Cast nickel alloy steels Forged SAE 3140
Control valves	X	..	..	..	..	..	X	..	..	..	..	Cast nickel alloy steels Forged SAE 3140
Bolts and studs	X	..	..	..	X	..	X	..	..	..	..	SAE 3140, 3240, 2330
Sucker rods	X	X	..	..	..	X	..	..	..	X	..	SAE 3120, 3130, 4615
	X	X	..	..	..	X	..	..	..	X	..	SAE 4615, SAE 2310-15 Nickel ingot iron; nickel molybdenum ingot iron

Typical Properties of Quenched and Tempered Nickel Alloy Steels Used in Oil-Production Equipment* (Medium Grain-Size Characteristics)

(All Specimens Tempered at 1,000° F.)

SAE Steel No.	Size of Test Specimen (Inches)	Approx. Quenching Temperature In Oil (Deg. F.)	Yield Point (Lb. Per Sq. In.)	Tensile Strength (Lb. Per Sq. In.)	Elongation in 2 In. (Per Cent)	Reduction of Area (Per Cent)	Brinell Hardness No.	Izod Impact (Ft.-Lb.)
2340	1" rounds	1425°	120,000	136,000	21.0	60.0	300	50
	2" rounds	1450°	110,000	131,000	20	57	270	..
3140	1" rounds	1500°	119,000	142,000	17.0	57.0	285	55
	2" rounds	1525°	89,000	120,000	14	53	240	..
X-3140	1" rounds	1475°	130,000	154,000	16.0	55.0	315	..
3240	1" rounds	1475°	140,000	160,000	17.0	55.0	330	44
	2" rounds	1500°	126,000	154,000	19	47	310	..
3250	1" rounds	1450°	145,000	167,000	17.0	52.0	340	30
3340	1" rounds	1425°	145,000	170,000	18.0	53.0	325	30
	2" rounds	1450°	136,000	157,000	19	55	315	..
4340	2" rounds	1525°	165,000	180,000	14	48	370	..
4640	1" rounds	1500°	132,000	150,000	17.0	57.0	310	42
4650	1" rounds	1475°	144,000	162,000	17.5	53.0	330	38

* Data in this table abstracted from "Properties and Applications of Quenched and Tempered Nickel Alloy Steels," published by the International Nickel Co., Inc.

ALLOY NICKEL STEELS

Failures and breakages of production equipment are often as expensive as fires. Your safest, cheapest insurance against failure of vital parts at critical times is specifying the right Nickel alloy steels.

The table above lists service requirements which modern oil production equipment must withstand — and the recommended SAE Nickel alloy steels which have proved most dependable for that usage.

The table at left shows typical mechanical properties of these Nickel alloy steels. Compare these characteristics with those of your present materials. You will find it convenient to refer to this listing when writing your purchase order specifications. Your questions regarding uses of Nickel are always welcome.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.

Cement For Oil Wells

Status of Testing Methods and Summary of Properties*

By W. W. ROBINSON
The Texas Company

THIS paper presents a compilation of test methods being used to evaluate cement for use in oil wells. These special procedures have been developed in the industry, because standard test methods are not applicable. The special methods are given in detail—with purpose, procedure, interpretation, and practical application of test data. Results of tests covering several cements used in oil wells are shown. There is a definite need for standardization of methods for testing cements used in oil wells, and it is proposed that an American Petroleum Institute code be formulated.

This paper was presented at the Ninth Mid-Year Meeting, American Petroleum Institute, at the Roosevelt Hotel, New Orleans, La., May 17, 1939. The statements and opinions expressed herein are those of the author, and should not be construed as an official action or opinion of the Institute nor of this publication.

THE placement of cement in oil wells presents problems for both oil operator and cement manufacturer. Particularly in the case of deep drilling the need for special cements has resulted in the development of new test methods for evaluative purposes.

Although these tests have contributed to the solution of cementing problems, their development and application have not been coordinated. Consequently, considerable confusion exists as to acceptable methods and apparatus for carrying on such work.

This paper presents a compilation of methods for making special tests on oil-well cements, and provides specific information as to the practical interpretation and application of results.

The use of cement in oil wells differs from its normal use in making concrete in that: (1) cement for oil wells is used as a neat slurry; (2) the slurry must be capable of being pumped for a considerable distance over a period of time; and, (3) the temperature of the slurry increases during placement. Because of these differences the standard ASTM testing methods, which were designed to evaluate portland cements suitable for concrete, do not provide the desired information concerning the suitability of cement for use under oil-well conditions.

Although some of the special testing methods have been described previously,[1, 2, 3a] it is believed that a compilation of these methods of testing cement for use in oil wells will serve a useful purpose. An attempt has been made to present the procedures in a uniform style, and in this connection the liberty has been taken of re-arranging and paraphrasing the written procedures of various companies.

Sampling

It is necessary to secure a representative sample of the cement in order to obtain reliable test results. This may be accomplished by means of a tube sampler, as shown in Figure 1, and a wide-mouth air-tight

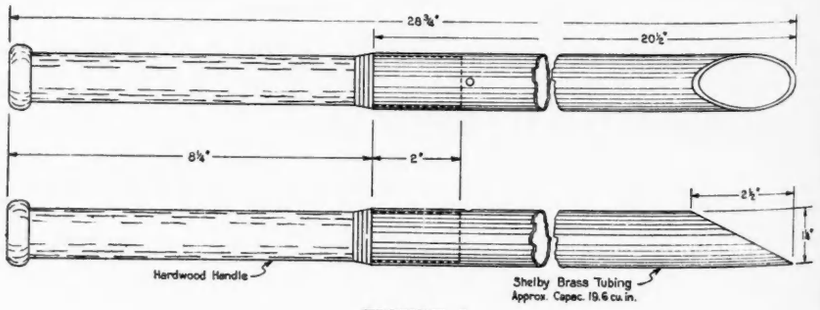


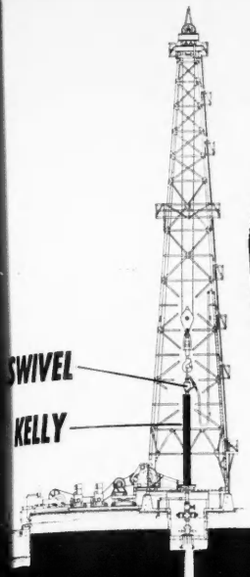
FIGURE 1
Cement Sampler

* A report of the special subcommittee on Oil-Wells Cements of the A.P.I. Division of Production's Topical Committee on Materials, which is composed of the following members:

W. W. Robinson, chairman, California Sect.: A. J. Barnewolt, Standard Oil Co. of California; F. E. Davie, Shell Oil Co.; Norris Johnston, General Petroleum Corp.; P. H. Jones, Union Oil Co. of California; K. L. Vonderahe, Richfield Oil Co. Southwestern Sect.: G. E. Cannon, Humble Oil and Refining Co.; J. K. Butler, The Texas Co.; F. B. Markle, Gulf Oil Corp.; W. T. Doherty, Mid-Continent Sect.: Emory Kemler, Gulf Oil Corp.; C. V. Millikan, Amerada Petroleum Corp.; Mark Terry, The Texas Co.

[a] Figures refer to bibliography at end of second installment of article.

CHECK YOUR DRILLING STRING ALIGNMENT AND AVOID FAILURES



DRILL PIPE

TOOL JOINTS

DRILL COLLARS

Unexplainable drilling string failures have been a major oil field problem. Believing these failures were caused by misalignment in the drilling string—misalignment not perceptible to the naked eye—The National Supply Co. developed the Alignascope, an instrument for checking the straightness of the string. In actual use this instrument proved to be of inestimable value in detecting imperceptible bends in the kelly, drill pipe, tool joints and drill collars.

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KELLY—Serious kinking of the drill pipe due to a small bend in the lower portion of the kelly.

DRILL PIPE—Drill pipe failures due to repeated stressing caused by imperceptible bends in the pipe.

TOOL JOINTS—Joint failure due to misaligned tool joint threads. Incipient galling and washed-out tapered joints caused by the joints backing off as a result of slight kinks in the drill pipe or drill collars.

DRILL COLLARS—Joint troubles due to crooked drill collars, or to collars being out of line with each other.

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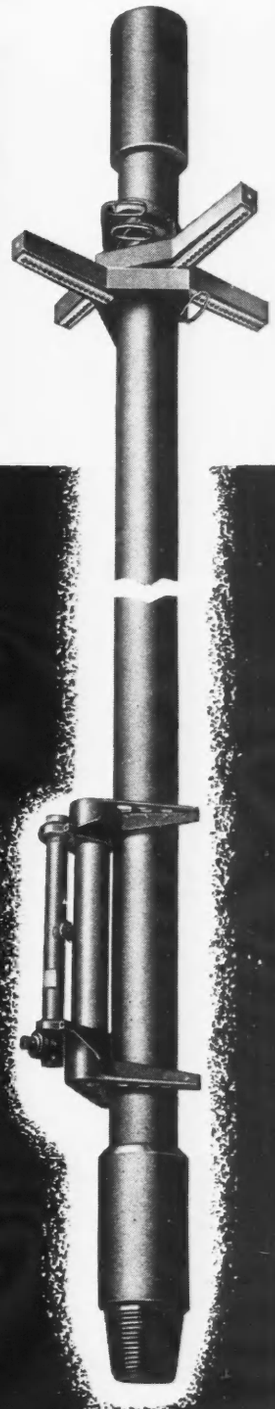

Alignascope in Position for Checking Drill Pipe.

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container, such as a 1-gallon friction-top pail. A typical sampling procedure is illustrated in Figure 2 through Figure 5.

Sieve Test

Purpose

This test is used to detect lumps, unground or foreign material; and to provide a clean sample for further testing.

Apparatus

An ordinary 30-mesh screen, 8 inches in diameter, should be used.

Procedure

Somewhat more than 2000 grams of dry cement should be screened.

Interpretation of Results

Substantially all of the sample should pass through the 30-mesh screen. However, the cement need not be questioned if any material retained on the screen is of such quantity and character that it will not cause trouble in pumps or other equipment used in cementing operations.

Ring Test
(For Determining Standard Slurry Fluidity)

Purpose

Oil-well cementing operations utilize cements made up as neat slurries. The amount of water necessary to make a slurry of a given fluidity varies between cements of differing particle size, etc. For example, it will be noted that 40-percent slurries made with different cements will vary in fluidity. Some will be thick and difficult to pump, whereas others will be thin. In order properly to compare different cements on a basis of uniform pumpability, it becomes necessary to determine the amount of water required to produce a comparable fluidity in all cases. To be of practical importance, a test should yield a result which can be duplicated at the mixer on a cementing job. The "ring test" offers a simple and rapid procedure for making such a determination.

Apparatus

Brass cylinder: Inside diameter, 1⅝ in.; height, 2 in. Wall thickness can vary, but ⅛ in. is preferable.

Glass plate: At least 12 in. square.

Screen: Any type of inexpensive 30-mesh screen.

Balance: Any type of reagent balance, sensitive to 20 mg.

Thermometer: Any type of thermometer with the range of —30 to +120 deg. F.

Graduated cylinder: 100-ml. capacity.

Slurry jar: A 1-qt. fruit jar with screw or clamp top, and rubber gasket.

Stopwatch: Any suitable second counter.

Hydrometer: Mudwate, or similar type.

Preparation of Sample

The cement to be tested is screened

Typical Sampling Procedure

FIGURE 2

Using the sampler shown in Figure 1, the Bates valve in the upper right hand corner of a sack is opened, the sampler inserted diagonally, and the thumb placed over the air hole.

FIGURE 3

The sampler then is withdrawn carefully, inclining it slightly downward.

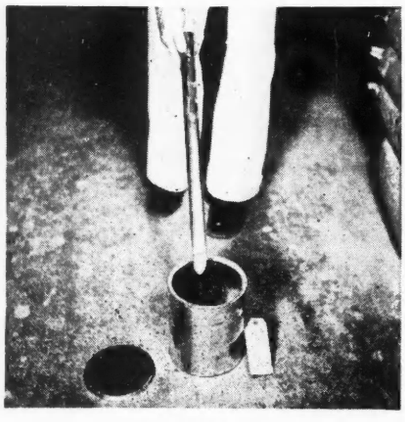


FIGURE 4

Holding the full sampler over the pail, the thumb is removed from the air hole—permitting the cement to fall out.

FIGURE 5

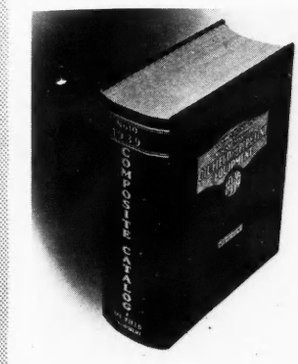
When it is desired to sample a silo, this is accomplished best by taking the sample at the silo pump from the valve at the base of the hopper.

TABLE 1

Quantities of Dry Cement and Water Needed to Make up Different Percentages of Slurry for Performing the Ring Test

For a 200-Gram Sample

Slurry (Percent)	Weight of Water Added (Grams)	Volume of Water at 80 Deg. F. (Milliliters)	Specific Gravity of Slurry
30	60.5	60.5	The specific gravity of the slurry is dependent upon the specific gravity of the dry cement. Because this is variable, no value can be computed which will fit all cements. This must be determined at the time the test is run.
31	62.5	62.5	
32	64.5	64.5	
33	66.5	66.5	
34	68.5	68.5	
35	70.5	70.5	
36	72.5	72.5	
37	74.5	74.5	
38	76.5	76.5	
39	78.5	78.5	
40	80.5	81.0	
41	82.5	83.0	
42	84.5	85.0	
43	86.5	87.0	
44	88.5	89.0	
45	90.5	91.0	
46	92.5	93.0	
47	94.5	95.0	
48	96.5	97.0	
49	98.5	99.0	
50	100.5	101.0	
51	102.5	103.0	
52	104.5	105.0	
53	106.5	107.0	
54	108.5	109.0	
55	110.5	111.0	
56	112.5	113.0	
57	114.5	115.0	
58	116.5	117.0	.05 gram of water added for stickage.
59	118.5	119.0	
60	120.5	121.0	



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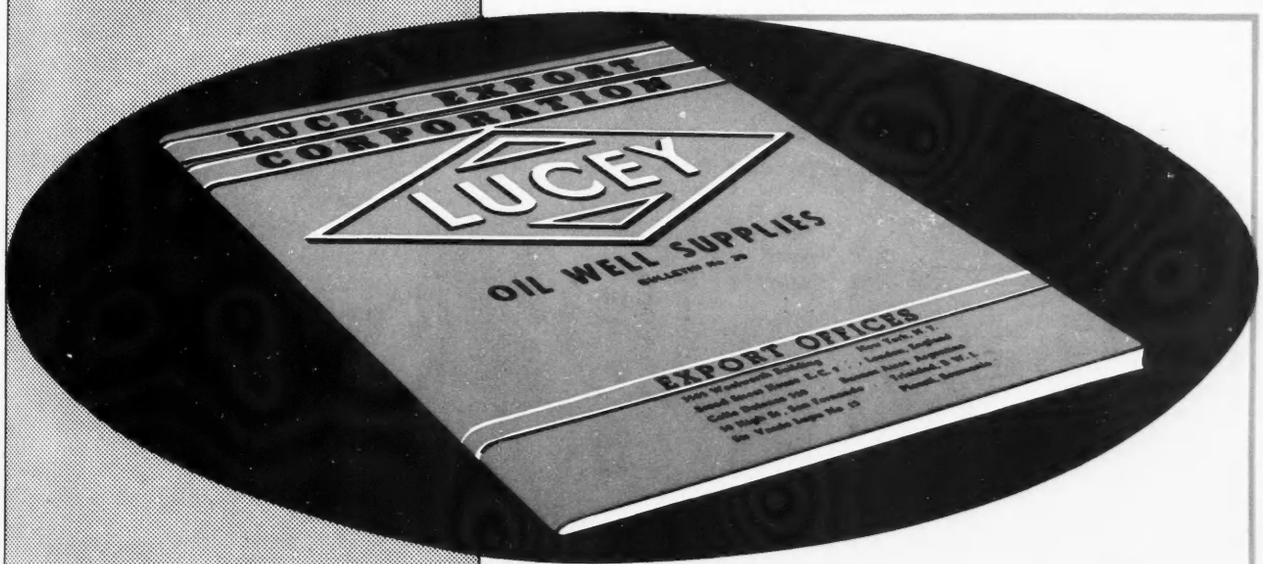

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first dry through the 30-mesh screen.

Procedure

A 200-gram sample of the cement is weighed out.

The required amount of clean water (preferably distilled water at 80 deg. F.) is placed in the slurry jar. The water may be weighed or measured volumetrically. Table 1 gives the required weight, or volume, of water for different percentages of slurry.

The weighed cement is poured *into* the measured amount of water in the slurry jar (see Fig. 6). The lid is applied quickly, and the jar shaken vigorously for exactly 2 min., to produce slurrification.

The brass cylinder, which has been placed upright in the center of the glass plate, then is filled quickly to slightly above the top (see Fig. 7).

The slight excess of slurry then is scraped off with a spatula or straight edge with a motion that throws the excess to the outer edge of the glass plate (see Fig. 8).

The cylinder immediately is lifted with a steady upward motion (without jerking)—permitting the slurry to form a smooth, round pat (see Fig. 9).

The diameter of the pat is measured after the pat has stood for exactly 1 min. (see Fig. 10).

Results

The diameter of the pat, measured to the nearest sixteenth of an inch, is taken as a measure of the fluidity of the slurry.

Interpretation of Results

A cement slurry is considered to be of standard fluidity when it forms a pat having a diameter of 7½ in. The amount of water required to produce a pat of this diameter represents the amount which should be used for conducting other tests, and may be used for gaging slurries for casing jobs. Moreover, by determining the density of this slurry by means of a Mudwate hydrometer, or similar instrument, the density value so obtained can be used to check the water—i. e., cement ratio of the slurry made at the time the cementing operation is carried out. For example, a 42.5-percent slurry of a certain cement yielded a 7½-in. pat. This 42.5-percent slurry had a density of 120.5 lb. per cu. ft. The density figure then becomes the value to be used for the control of slurrification for casing jobs. The density of the slurry must be determined at the time the ring test is performed, because cements vary in specific gravity.

Frequently the 7½-in. pat will not be obtained the first time the ring test is performed. However, the percentage of water and the diameter of the pat should be recorded. The test then should be repeated, using a larger (or smaller) percentage of water. One procedure is to make pats with 40- and 50-percent slurries, and plot the pat diameters against the percentage of water. Then, by interpolation, read off the percentage of water for a pat diameter of 7½ in. In making such an interpolation, a straight line may be used. If more than two points are taken, it will be

Ring Test for Determining Standard Slurry Fluidity

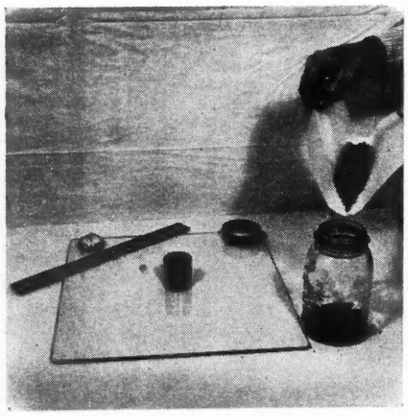


FIGURE 6

The apparatus consists of a brass cylinder 1⅝ in. in inside diameter and 2 in. high; and a glass plate 12 in. x 12 in. The required amount of water at 80 deg. F. is measured into a 1-qt. jar, and the weighed cement added.

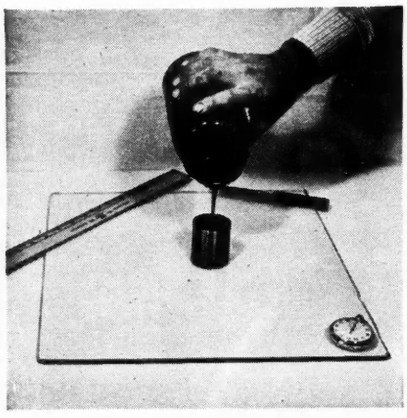


FIGURE 7

After the 2-minute shaking period, the jar is opened quickly and the slurry poured into the ring, which has been placed in the center of the glass plate. The bottom of the ring is open, and a smooth contact with the glass prevents the seepage of any slurry.

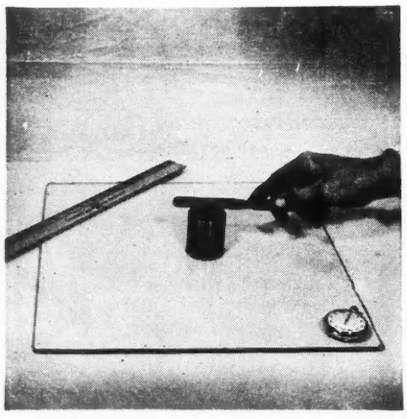


FIGURE 8

The top of the slurry is adjusted even with the top of the ring by removing the surplus with a spatula or straight edge.

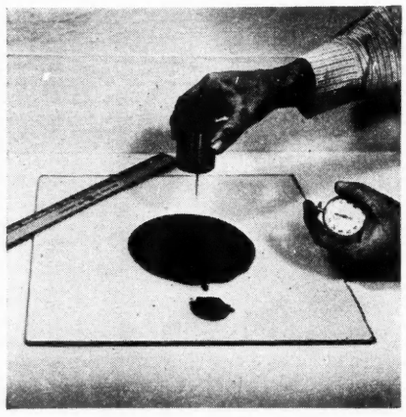


FIGURE 9

After leveling the slurry, the cylinder is grasped and quickly lifted upward so that the slurry falls to form a smooth round pat. As the cylinder is lifted, a stopwatch is started.

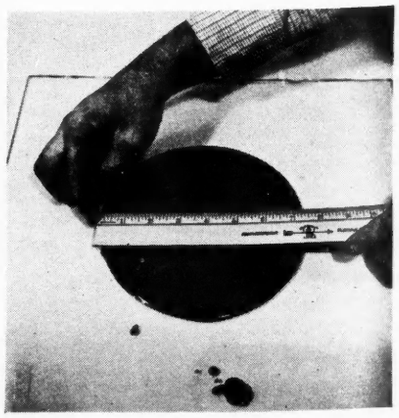


FIGURE 10

From the time the cylinder is raised, 1 minute is allowed to lapse, and the diameter of the pat measured with a ruler. The pat must measure 7½ inches plus or minus 1/16 inch.

noted that a slight curvature exists; but the use of a straight line does not introduced any serious error.

Thickening-Time Test

Purpose

Elevated temperatures accelerate the thickening and setting of neat-cement slurries. If a cement slurry is agitated after its mobility begins to decrease rapidly, the result will be a poor bond between pipe and formation, a loss of strength in the final set, and an increased permeability due to granulation. As the name implies, the thickening-time test gives an indication of the allowable time for mixing and placing a cement slurry in a well before it thickens to the point of being no longer pumpable.

Apparatus

Balance: Any type of torsion balance with a capacity of approximately 4.5 kg. It should have approximately 9-in. nickel-plated or brass pans.

Balance weights: One 500-gram and two 1000-gram commercial-grade metric weights should be provided.

Graduated cylinder: Any type of glass graduate of 1000 ml. capacity.

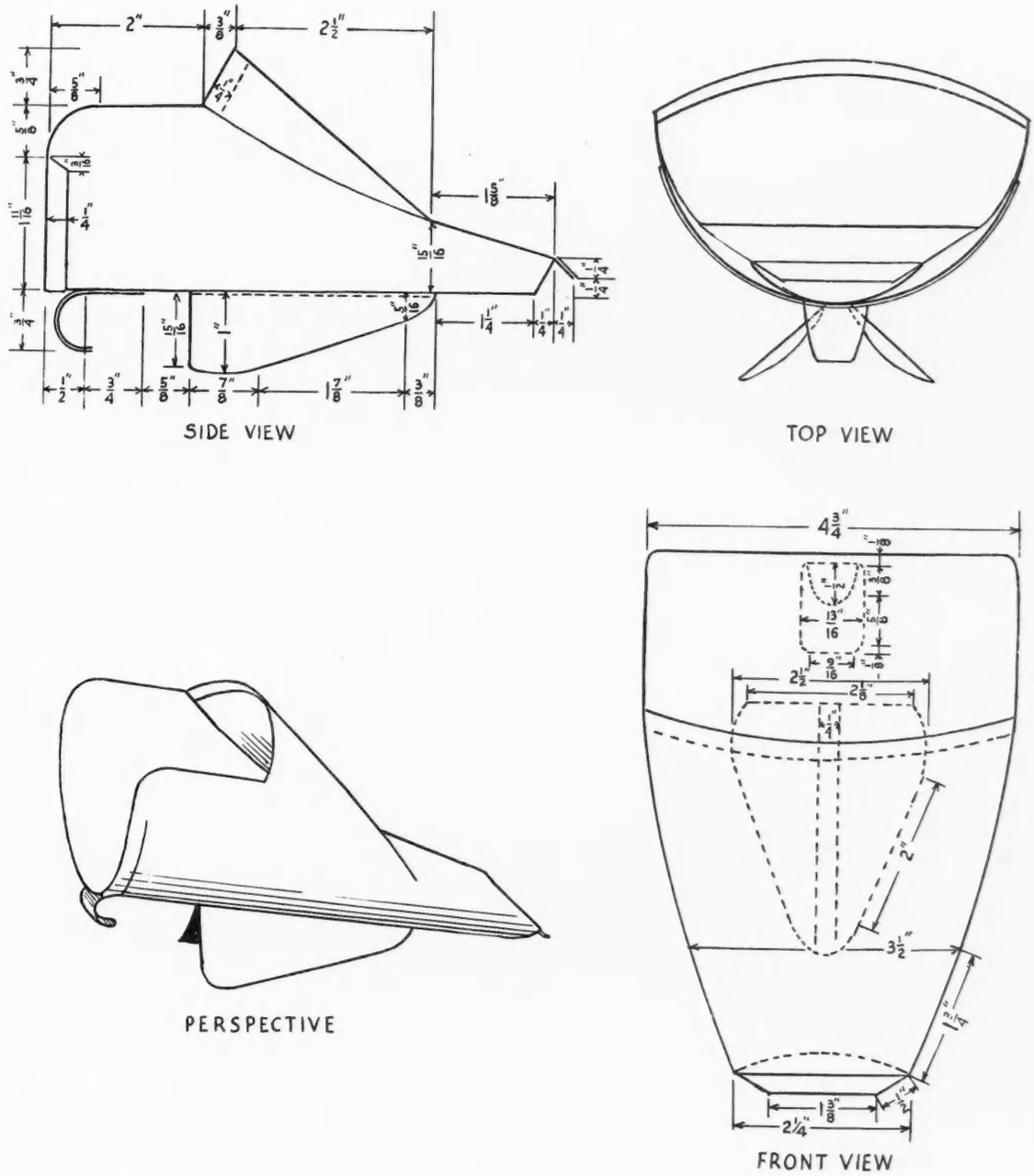
Slurry mixing jar: 1-gal.-capacity wide-mouth glass jar, with a screw or clamp top. The mouth of this jar should not be less than 4 in. in diameter.

Slurry funnel: See Fig. 11 for details of a special funnel.

Interval counter: A stopwatch.

Thickening-time machine: Thickening-time tester as developed by Standard Oil Company of California. The apparatus should be mounted on a base with motor (wired for

FIGURE 11
Slurry Funnel for Thickening-Time Tester



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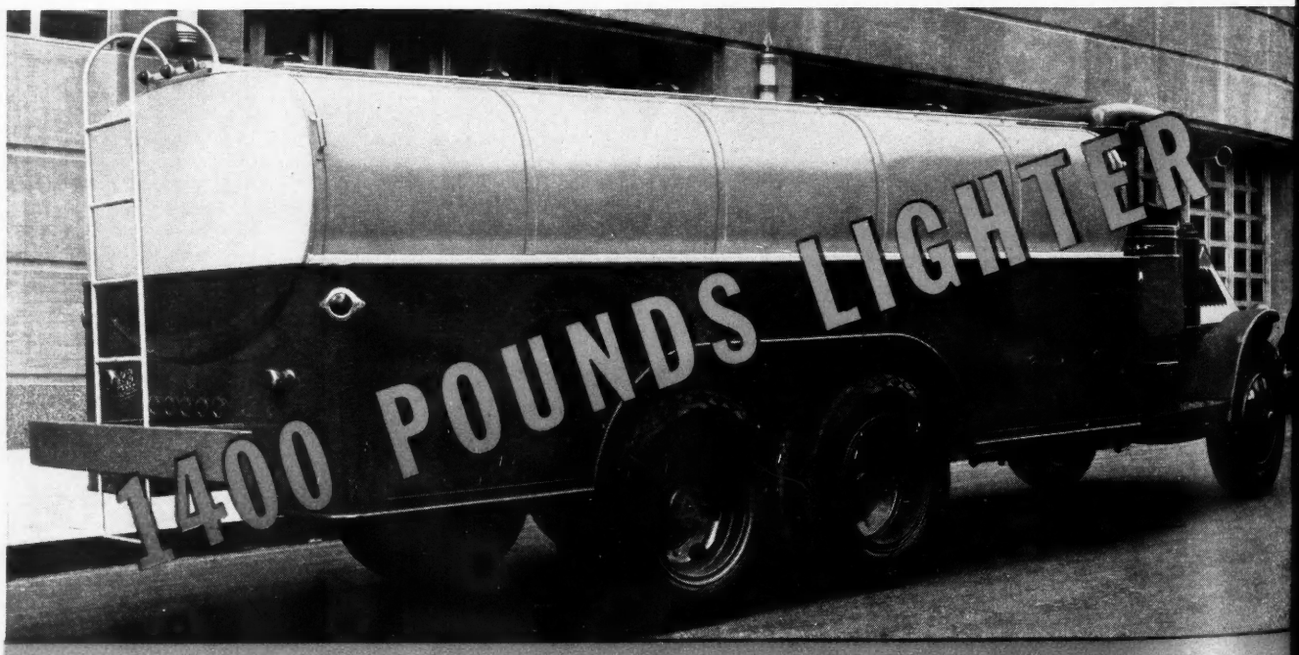

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type of current available) and fully equipped with pulleys, belting, rheostat, bath heater and thermostat, and two leather belts (see Fig. 12 for details).

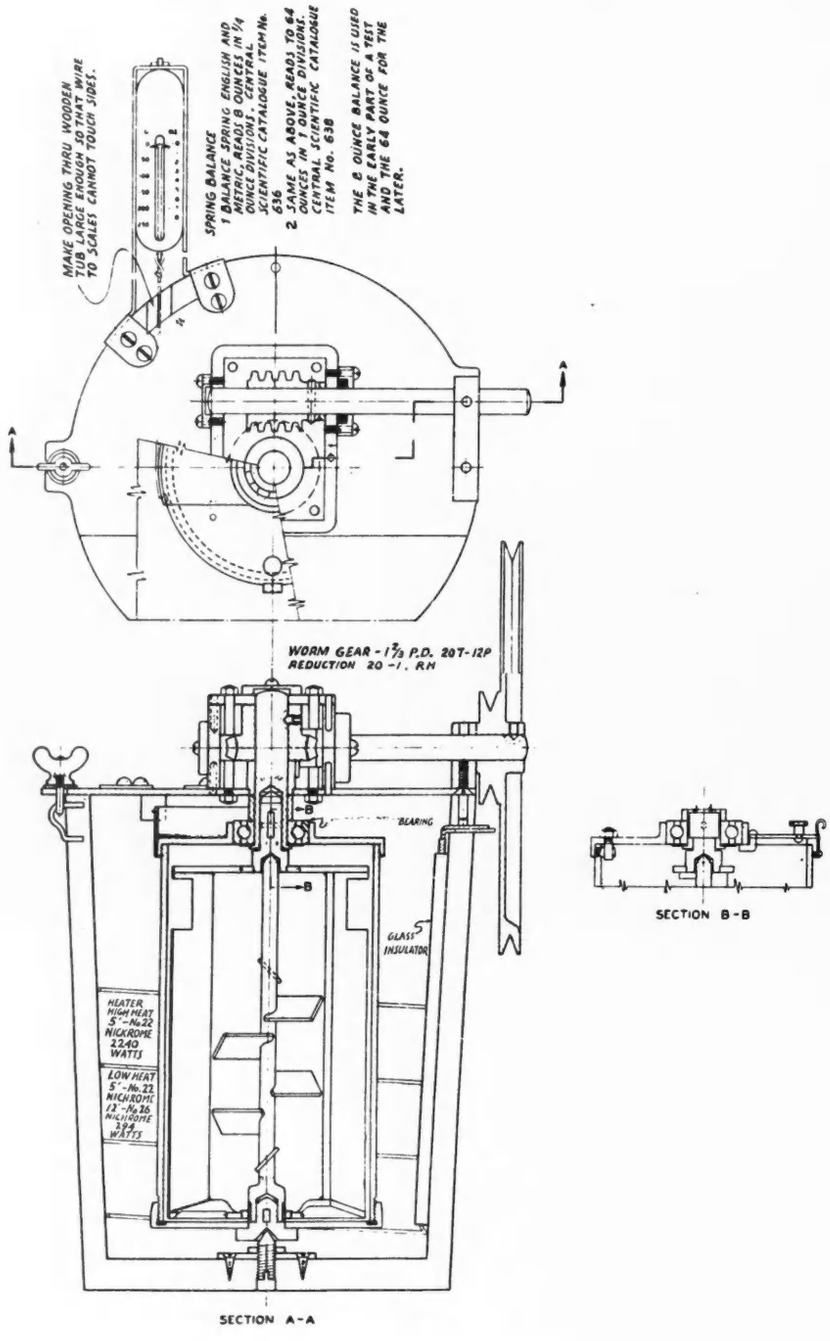
Preparation of Apparatus

Care should be taken to see that the apparatus is clean. This is accomplished best by thoroughly scrubbing the shell and paddles after each test. The inside of the shell should be clean and bright; and the paddles should be clean and bright, particularly the outside edges. The pin in the center of the shell bottom and the hole in the paddle shaft should be clean, so that the pin can be inserted completely.

All surfaces that come in contact with the slurry should be given a light coating of waterproof grease before each test. A medium-grade water-pump grease is satisfactory. Special care should be taken that the following places have been well lubricated: (1) the bearing surface on the bottom of the shell which supports the shell in the water bath; (2) the inside of the bottom of the stationary paddle which rests over the pin in the shell bottom; (3) the brass ring in the bottom bearing between the stationary and moving paddles; (4) both faces of the bushings in which the brass ring fits; (5) the top of the stationary paddle that is inserted into the revolving-paddle frame; and (6) the threads between the shell and the shell bottom.

FIGURE 12

Assembly Details of Thickening-Time Tester
(As Developed by Standard Oil Company of California)


MAKE OPENING THRU WOODEN TUBE LARGE ENOUGH SO THAT WIRE TO SCALES CANNOT TOUCH SIDES.
SPRING BALANCE
1 BALANCE SPRING ENGLISH AND METRIC, READS 8 OUNCES IN 1/4 OUNCE DIVISIONS. CENTRAL SCIENTIFIC CATALOGUE ITEM No. 636
2 SAME AS ABOVE, READS TO 64 OUNCES IN 1 OUNCE DIVISIONS. CENTRAL SCIENTIFIC CATALOGUE ITEM No. 638
THE 8 OUNCE BALANCE IS USED IN THE EARLY PART OF A TEST AND THE 64 OUNCE FOR THE LATER.
WORM GEAR - 1 7/8 P.D. 20T-12P
REDUCTION 20 - 1, R.H.
BEARING
GLASS INSULATOR
HEATER
HIGH HEAT
5' - No. 22 NICHROME
220 WATTS
LOW HEAT
5' - No. 22 NICHROME
12' - No. 26 NICHROME
334 WATTS
SECTION A-A
SECTION B-B

After the cement has been added to the water, it should be distributed throughout the water quickly by means of a broad spatula, or other

The apparatus then should be assembled in the water bath and rotated at the highest speed (60 r.p.m.) to see that none of the parts scrape. The scale should show no pull at this speed. The cover for the shell should not actually rest on the shell, but should have a small clearance (approximately 0.005 in.), and it should be possible to rotate the shell with the finger without rotating the cover.

Inasmuch as the rate of temperature rise of the test is 1 deg. per min. from 80 to 140 deg. F. in exactly 60 min., from the time the dry cement first has been added to the water, the temperature of the water bath is adjusted at 83 deg. F. in order to compensate for the 3-min. interval taken to mix and place the slurry in the mixing chamber.

Care should be exercised that the water in the bath covers the wires of the heating system, and is slightly above the height to which the slurry will fill the shell. The water should be agitated either by an air jet or a mechanical stirrer to insure a uniform temperature.

The flexible chain from the shell cover to the spring scale must not scrape against the water bath, and the pull always must be tangential to the segment on the shell cover to which it is attached.

Preparation of Sample

A weighed sample of cement which has passed through a 30-mesh screen is taken for the test.

The quantities of dry cement and water needed to make up different percentages of slurry for performing the test are given in Table 2.

Measure or weigh out the required amount of water (preferably distilled) at a temperature of 80 deg. F., and pour it into the slurry jar. Then add the cement, and simultaneously start the stopwatch.

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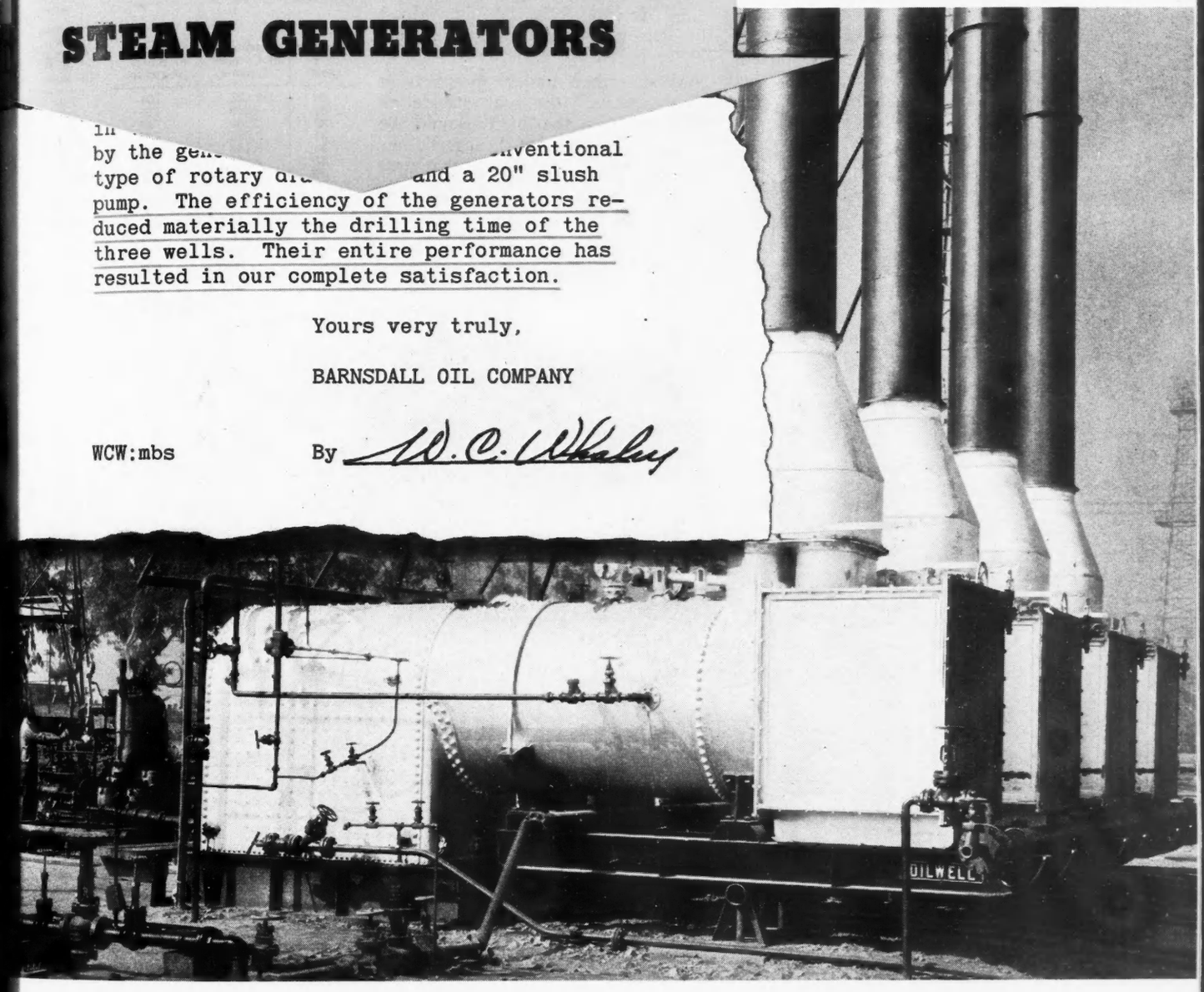
BARNSDALL OIL COMPANY

WCW:mbs

By W. C. Whaley



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blunt instrument which will reach to the bottom of the jar. This operation requires but a moment to perform, and will assist in a more rapid slurrification.

Cover the slurry jar tightly, and shake vigorously for the remainder of the 2-min. period which started when the cement was added to the water.

Procedure

Quickly pour the slurry into the mixing chamber of the thickening-time apparatus which has been prepared as outlined hereinbefore. A funnel, such as that shown in Fig. 11, should be used to transfer the slurry from the jar to the mixing chamber.

After engaging the top of the mixing chamber with the movable head, start the apparatus at the higher speed (approximately 60 r.p.m.). Allow the test to continue at this speed until 19 min. have elapsed *from the time the cement first was introduced into the water.*

At the end of the 19 min., adjust the belt to the larger pulley. This slower speed is 14.5 r.p.m.

As described under "preparation of apparatus," the temperature of the water in the bath should be raised at the rate of 1 deg. F. per min. from the time the cement first is poured into the mixing water until a temperature of 140 deg. F. has been reached. The temperature then must be maintained at 140 deg. F. to the completion of the test.

FIGURE 13
Thickening-Time Test

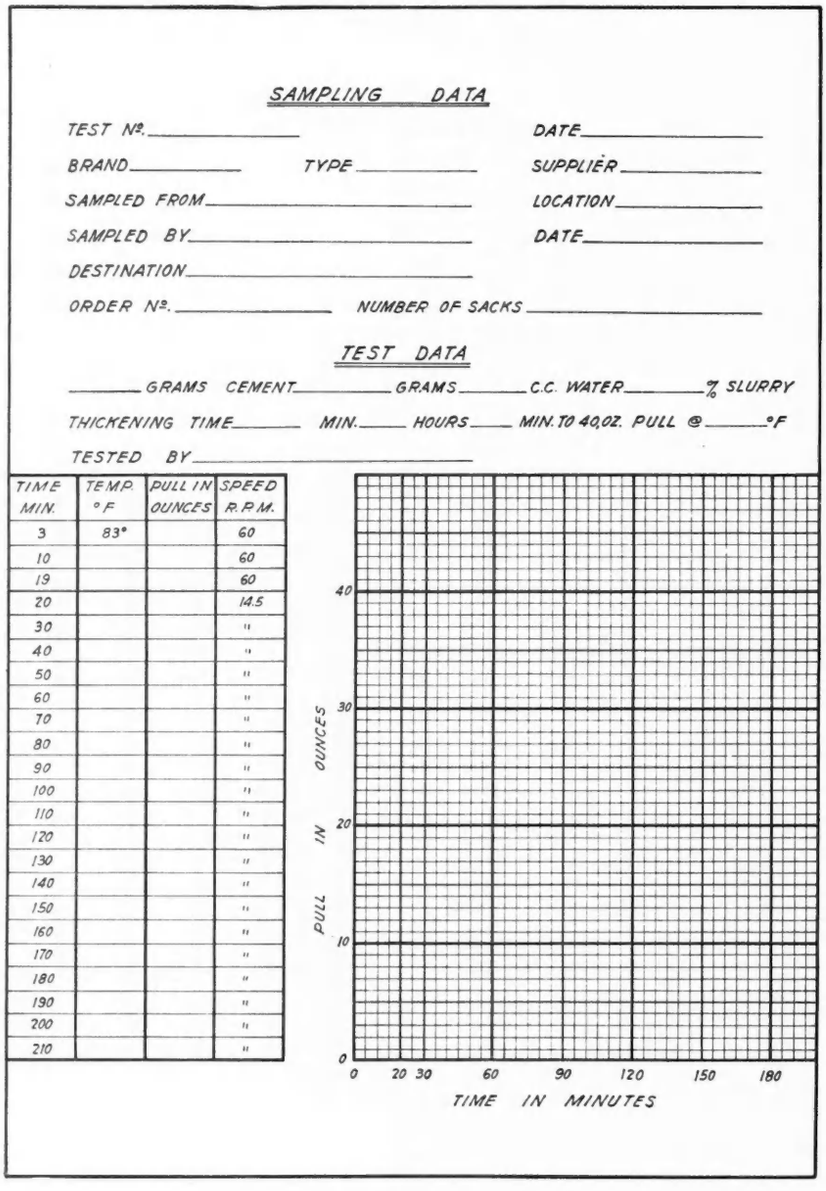

TABLE 2

Quantities of Dry Cement and Water Needed to Make up Different Percentages of Slurry for Performing Thickening-Time Test

Slurry (Percent)	Quantity of Cement (Grams)	Quantity of Water* (Grams)	Equivalent Volume of Water at 80 Deg. F. (Milliliters)
30	2,325	704	706
31	2,290	716	718
32	2,250	726	728
33	2,215	737	739
34	2,185	749	752
35	2,150	758	761
36	2,120	769	772
37	2,090	779	782
38	2,060	789	792
39	2,030	796	799
40	2,000	806	809
41	1,970	814	817
42	1,945	823	826
43	1,920	832	835
44	1,890	838	841
45	1,870	847	850
46	1,845	855	858
47	1,820	861	864
48	1,800	870	873
49	1,780	878	881
50	1.750	881	884
51	1,735	891	894
52	1,710	895	898
53	1,690	902	905
54	1,670	908	911
55	1.650	914	917
56	1,635	922	925
57	1,615	927	930
58	1,595	931	934
59	1,580	938	941
60	1,560	942	945

* 6 grams of water have been added to compensate for errors due to wetting, drainage, and evaporation.

The minimum reading of the pull exerted by the slurry as the test progresses should be taken at 10-min. intervals.

The elapsed time from initial wetting of the cement to the occurrence of the 40-oz. pull shall be considered the thickening time of the slurry. For the purpose of plotting the results, the test should be carried to a 48- or 50-oz. pull.

A pull (vertical ordinate) vs. time (horizontal ordinate) curve should be plotted and carried to the 48- or 50-oz. reading mentioned above. From this curve the thickening time at 40 oz. can be read more correctly; because, as the slurry thickens, the reading on the spring scale becomes jerky.

Recording of Results

Fig. 13 gives a self-explanatory form that can be used for reporting the results obtained by the test.

Application of Results

In order to determine what cement and slurry composition to use for a given cement job, it is first necessary to know the time that would be required normally for mixing and placing the slurry, and the maximum temperature any part of the slurry will reach in that total time. The total time for the job may be calculated readily by use of the alignment chart prepared by The

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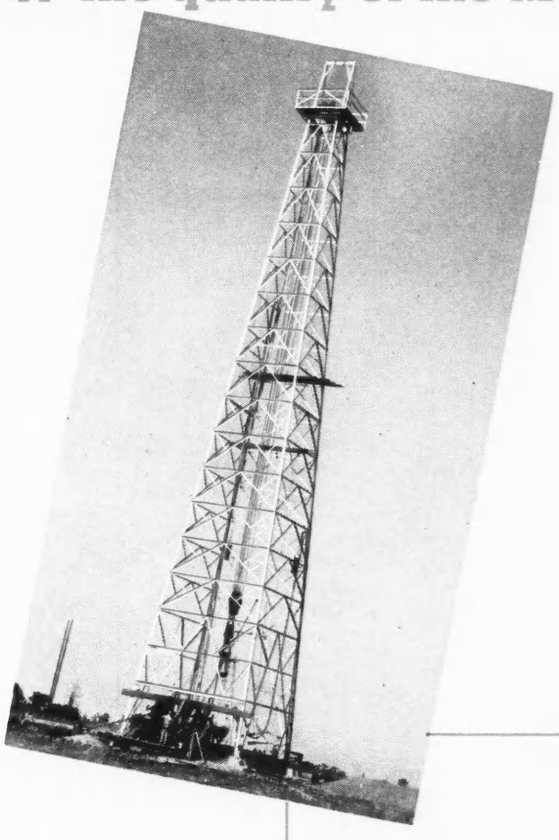

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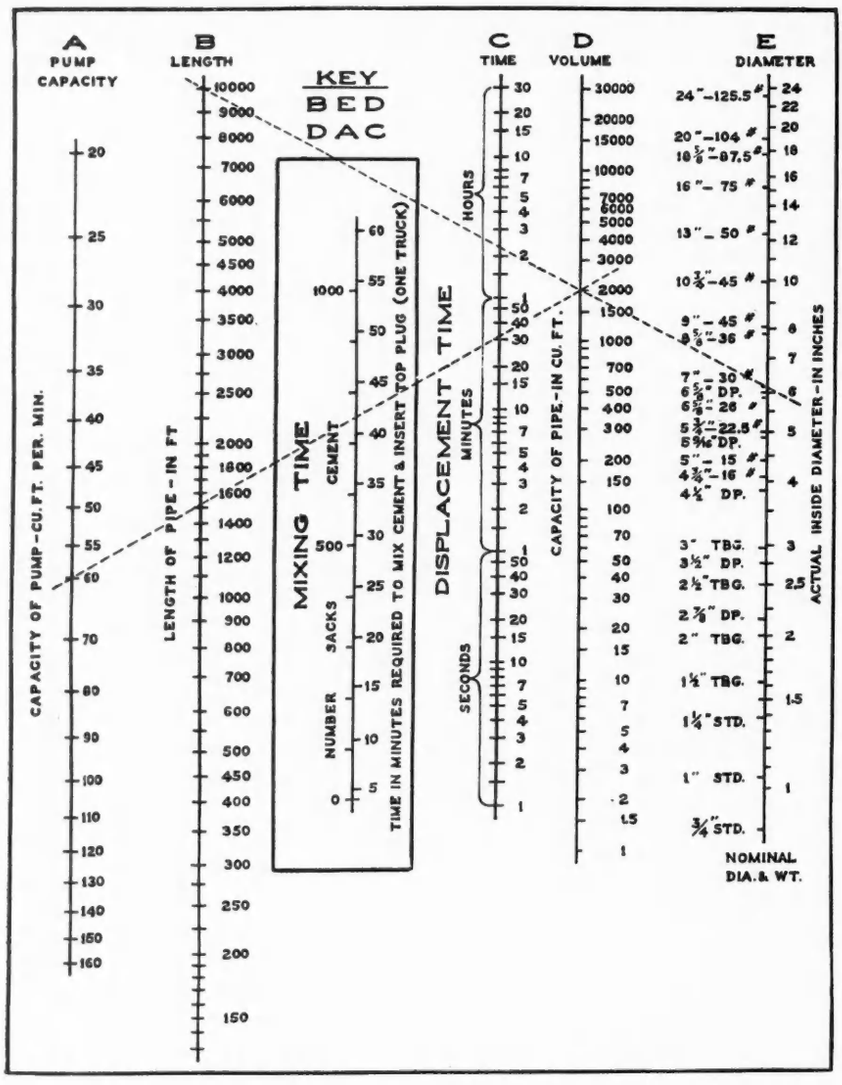


FIGURE 14
Cement Placement Time

Texas Company and shown in Fig. 14, which is self-explanatory.

The thickening-time test may be used advantageously to classify and rate cements available in any area. Tests for this purpose can be made using slurries with water contents such that their ring-test pats will measure 7½ in. in diameter. This procedure will insure that comparisons are made with slurries of uniform initial fluidities. However, if desired, similar ratings of available cements may be made with slurries having some standard water content, such as 40 percent. It is helpful to tabulate results of such a survey in the order of increasing thickening time.

No known means are available for determining accurately the maximum temperature any portion of the cement will attain during placement. This temperature will be lowered materially by a high rate of placement of the slurry. Until better data are available, it is safe to say that the cement temperature during placing never exceeds the normal bottom-hole mud-circulation temperature. From the meager data available, this may be estimated by use of the following equation:

$$T_c = T_m + \frac{D}{300},$$

or the maximum cement slurry temperature (T_c) equals the normal mud-circulating temperature (T_m) plus the depth divided by 300 (the reciprocal of the thermal gradient during normal circulation). For example:

Mud temperature, 130 deg. F.
Depth, 10,000 ft.
Maximum slurry temperature,

$$130 + \frac{10{,}000}{300} = 163 \text{ deg. F.}$$

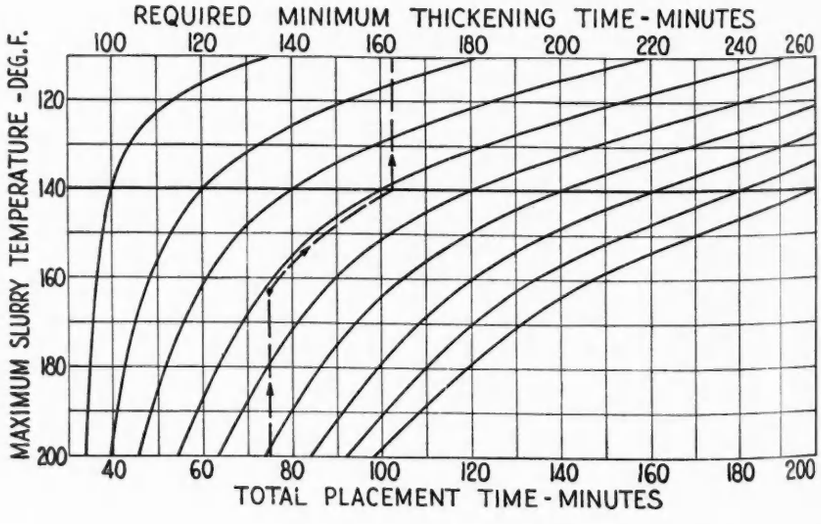
Future findings on temperature gradients for different districts may modify the equation so that it may be used with greater confidence.

Having the placing time and maximum working temperature of the cement, the thickening-time test will give the required data for selection of the proper type of cement and slurry to insure safe pumpability throughout the placing time. Obviously, it is desirable to use the thickest slurry possible consistent with safe pumpability to assure rapid development of strength after placement.

Fig. 15 shows the effect of maximum acquired slurry temperature on the available period of pumpability (total placement time) of various types of cement.

It will be noted that the required thickening time is exactly 60 min. greater than the total placement time. This extra time has been added as a factor of safety to insure the selection of cements which will maintain their pumpability in the event of unforeseen delays. The chart should not be taken as a permanent stand-

FIGURE 15
Thickening-Time Calculation Chart


REQUIRED MINIMUM THICKENING TIME - MINUTES
100 120 140 160 180 200 220 240 260
MAXIMUM SLURRY TEMPERATURE - DEG. F.
120 140 160 180 200
40 60 80 100 120 140 160 180 200
TOTAL PLACEMENT TIME - MINUTES

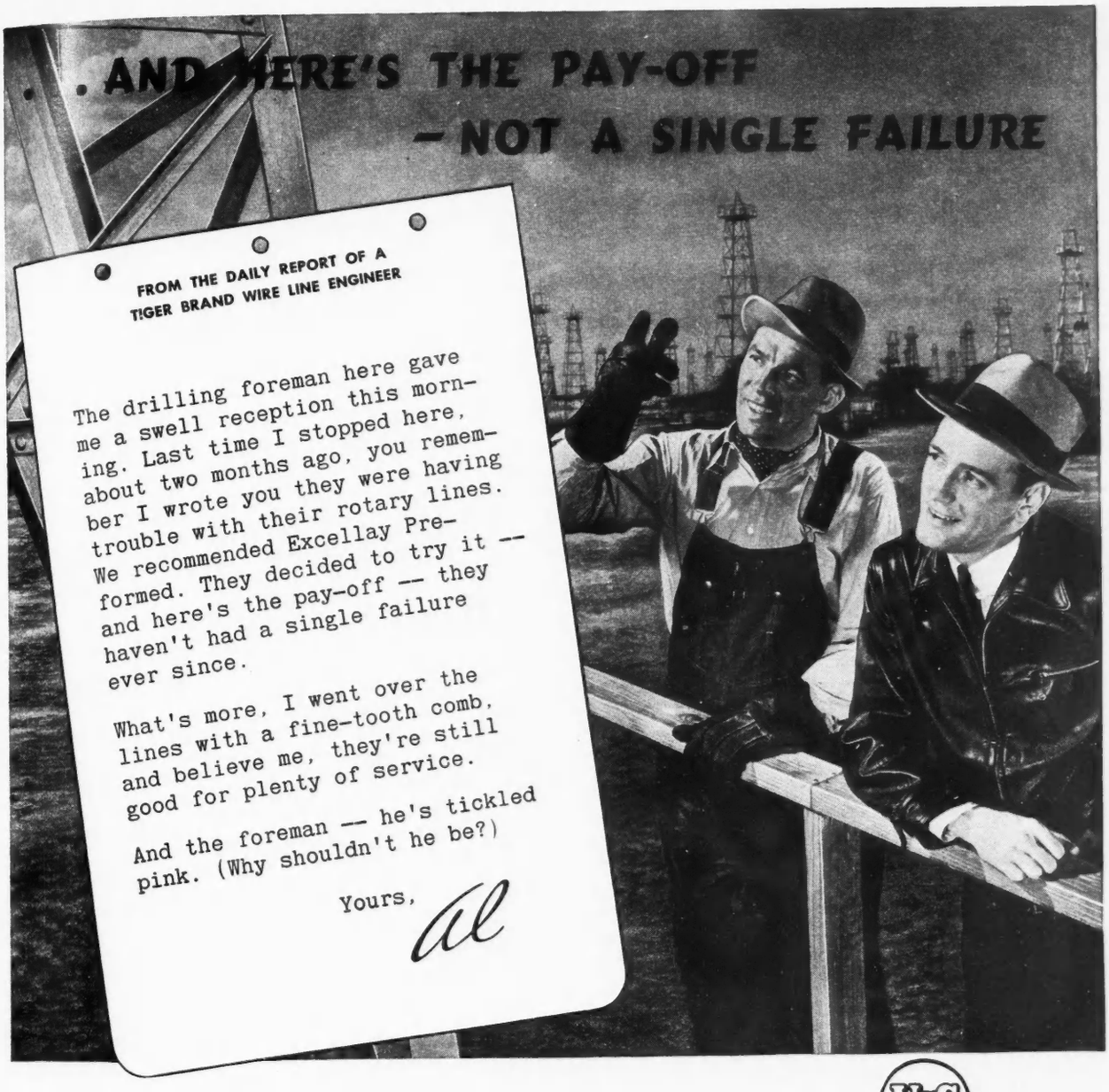

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FIGURE 16

From left to right are shown the inner and outer sections of the agitating paddle; the shell with bottom removed; and the top mounting made up of drag head, scale mounting, bath stirrer, and pulley wheels.

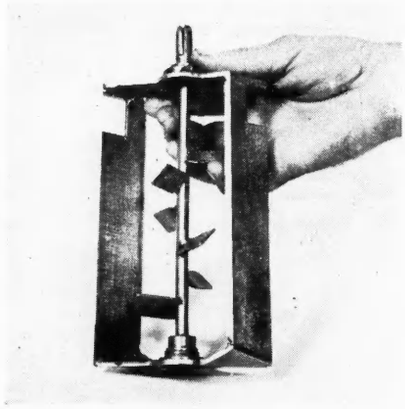


FIGURE 17

The agitating paddle is made up of two parts. The outer part is connected to the motor-driven gear box by means of the pin shown at the top. The inner paddle floats on two bearings, and is dragged by the thickening slurry.

FIGURE 18

In preparing the instrument, the bottom is screwed on the shell after having been lubricated with a waterproof grease. The paddle, assembled, as shown in Fig. 17, then is placed into the shell, and the pin engaged with the lug in the center of the drag head.

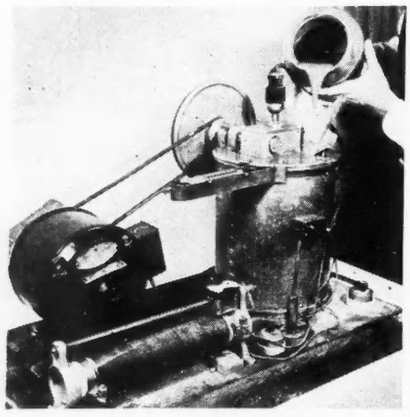


FIGURE 19

After the water bath has been adjusted to 83 degrees F., the prepared slurry is poured into the shell by means of the funnel illustrated in Figure 11, and the belt and pulley adjusted to a speed of 60 r.p.m. At the end of 19 minutes, the speed is reduced to 14.5 r.p.m. by adjusting the belt to the large pulley.

FIGURE 20

By the time the slurry has thickened to the point of exerting a 40-oz. pull, its mobility has been reduced to the point of rendering it barely pumpable.

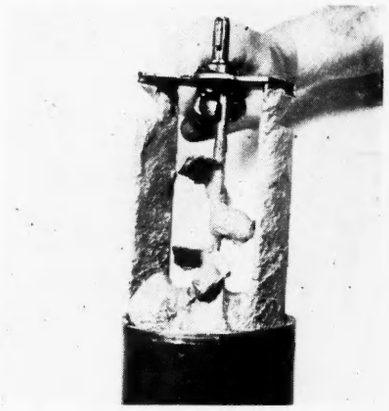


FIGURE 21

Soon after the 40-oz. point has been reached, the initial set takes place.

ard to be adhered to. It is based on limited information, and should be considered as tentative until further work produces material of more permanent value.

For a given cement job, locate a point on Fig. 15 corresponding to the total placement time and maximum acquired slurry temperature. Follow parallel to the nearest characteristic curve to the 140-deg.-F. line. The time so determined will be "standard thickening time" (40 percent slurry; 140 deg. F.) for this cement job, and will determine the choice of the cement.

The following example illustrates a procedure for calculating the thickening time of a cement to use for a specified set of conditions:

Depth, 10,000 ft.

Casing, 7-in. API 30-lb.

Cement pump capacity, 60 cu. ft. per min.

Cement required, 750 sacks.

Surface mud temperature, 130 deg. F.

Maximum slurry temperature, 163 deg. F. (from preceding example).

Referring to Fig. 14, find 10,000 ft., on scale *B*, and connect this with a straight edge to 7-in. 30-lb. casing on scale *E*. Read the volume of 2000 cu. ft. on scale *D*.

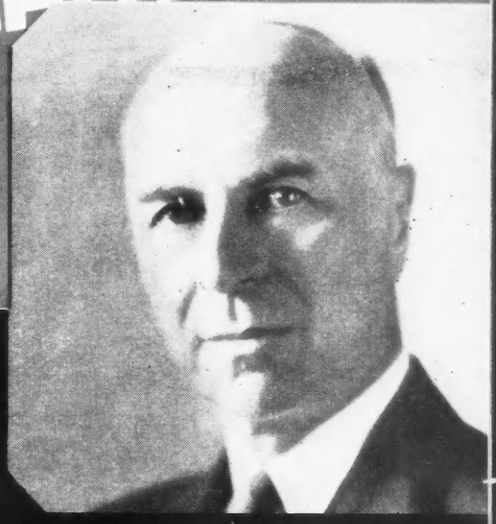
Connect 2000 cu. ft. on scale *D* with a pump capacity of 60 cu. ft. per min. on scale *A*, and find the displacement time of 33 min. on scale *C*. This is the time required to displace the cement. To this value must be added the time, in minutes, required to mix the cement and insert the top plug. This value is obtained from the "mixing-time" scale. For 750 sacks (one truck) the mixing time would be 42 min. The total time then would be 33 plus 42 equals 75 min.

Refer to Fig. 15, and find 75 min. on the placement-time axis, and read upward to the intersection with the 163-deg.-F. line from the slurry-temperature axis. From the point of intersection of these two coordinates follow parallel to the nearest curve to the 140-deg.-F.-temperature ordinate. Then read upward to find the minimum thickening time of 163 min. required of the cement.

Fig. 16 through Fig. 21 show the essential parts of the thickening-time tester and the appearance of the slurry at the 40-oz. point.

(The second and concluding part of this article will appear in an early issue.)

The KING OF THE WILDCATTERS" Selects -



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Texas' First Water-Flooding Project Big Success

By JOHN C. ALBRIGHT

SUPPOSE you had bought an oil property, started water flooding it three years ago, and today were recovering five times as much oil as you were when you started injection.

Then you would have a situation comparable to that at the first water flooding project in Texas: Ed Peterson and J. A. McCarty's Hardin farm lease in the Oscar Farish Survey, southwest of Burkburnett, in Wichita County. The history of the the project is somewhat as follows:

During the boom days of Burkburnett many small pools were discovered south of the Red River in Wichita County. Among them in 1918 was an isolated, lenticular structure of about 60 acres along that part of Gilbert Creek which passed through the Hardin farm.

The original owner of the tract drilled a number of wells, uncovering four productive sands at 240, 360, 440 and 560 feet, respectively. On the matter of spacing, in those days the procedure was left to the whim of the individual or company, or sometimes even to that of the contractor. There were no spacing orders; the Texas Railroad Commission then was exactly what its title indicates. Cementing was not generally practiced, and the wells were completed in the shortest possible time, to get the oil out as quickly as possible. And never a thought was given to channeling or other damages to the reservoir. Pipe generally rested on a thread protector or a half collar landed on a shoulder above or in the sand.

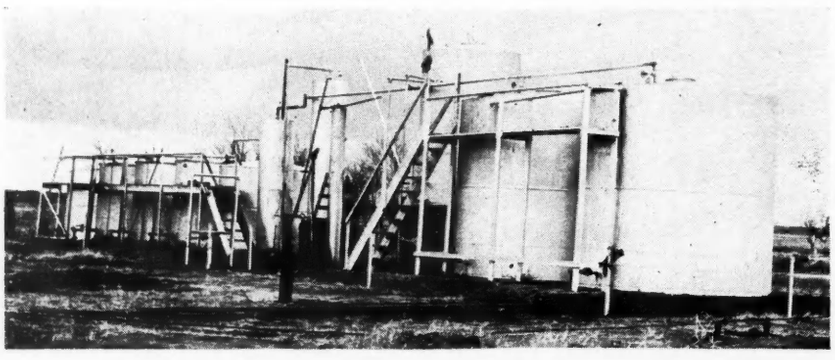
The situation above outlined partly was responsible for the author's observation at the beginning of the project (THE OIL WEEKLY, October 26, 1936) that "Results from subjecting this small field to water flooding are not expected to be as gratifying as elsewhere."

As previously inferred, records of production per well, production per sand, or production of the field as a whole were not available for the period prior to 1929. Neither was an estimate on residual oil per acre-foot of sand. Pipeline connections had been changed several times—run tickets misplaced. But it was known that some of the original wells initialled as much as 50 barrels and flowed naturally for a short period.

Lease Down to 10 Barrels Daily

January 1, 1929, the record shows the whole field, in which 30 wells were located, was producing only 10 barrels per day. On that day Peterson and McCarty acquired title to the property. They inaugurated a program of cleaning out the wells and plugging the hopeless ones. This brought production from the lease up to 15 barrels daily.

Application of vacuum and producing freely from open casing heads had exhausted the original gas contained in the sands, so that by the summer of 1929 installation of an electric powered compressor was indicated. Gas for recycling was purchased from a pipe line company, forced into injection



Into this tank battery flows five times as much oil daily as when water flooding started three years ago.

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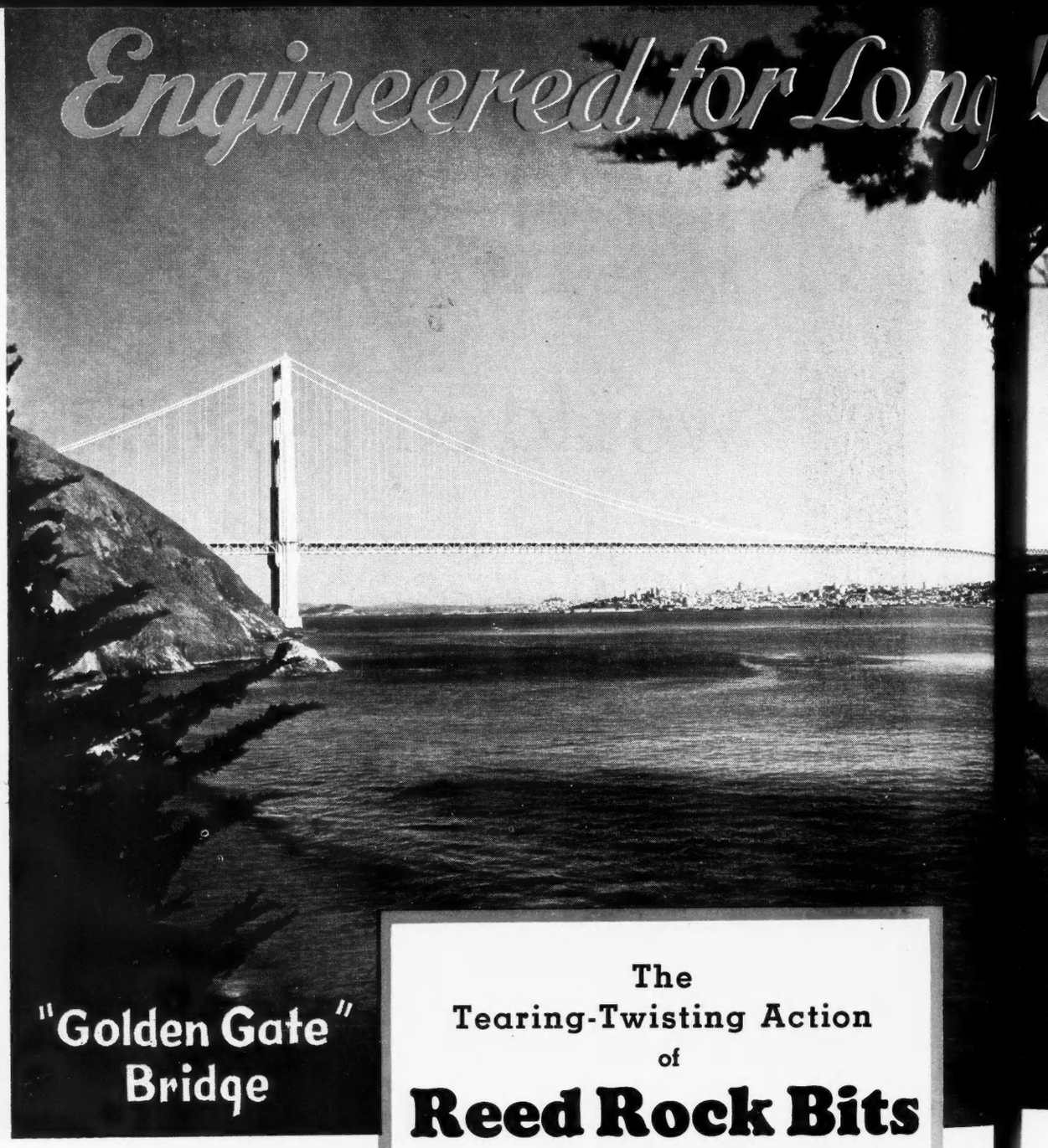

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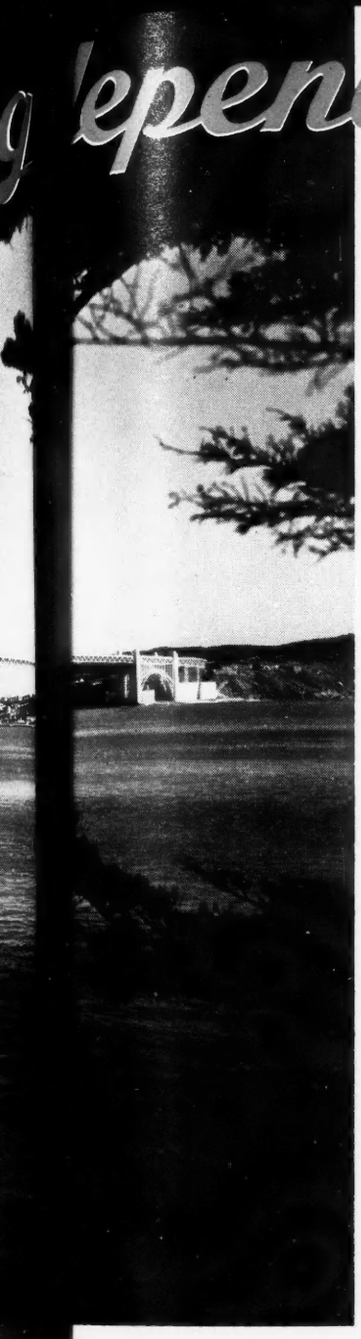

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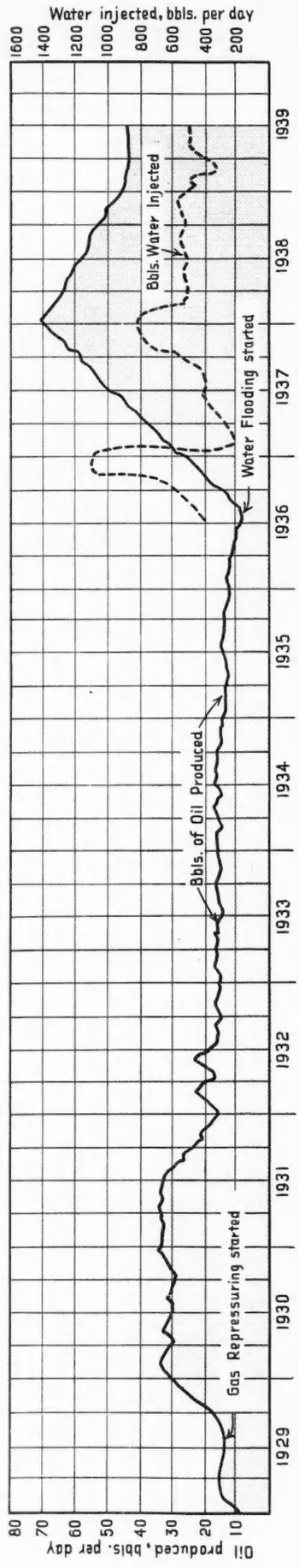
wells and separated from the oil at the flow tank battery. This, in conjunction with another general cleaning out and straightening up program, boosted production to 28 barrels by the end of the year and a daily average of 30 barrels for 1930.

But the daily recovery had dropped to 25 barrels during 1932. The decline continued down to 9 barrels per day in December, 1935, resulting in a decision to flood.

When preparing the property for this the original wells, which were drilled in 1918-19, were retained as producers, except, of course, those which had been abandoned when Peterson and McCarty first obtained the property. Economic conditions caused dismissal of consideration of a pattern for injection wells; the area was small, the oil in place of relatively small volume.

Of 26 wells included at that time in the projected flood, 11 were producing from the 360-foot sand and 15 from the 560-foot sand. Eight wells were drilled for injection purposes, four in the upper level and four in the lower, giving ratios of 1:3 and 1:4, or just reverse of the practice in Eastern States fields, where the injection wells outnumber the oil producers. They were located to provide the best water distribution possible under the circumstances.

Two methods of completion were employed on the injection wells. Some were drilled with an 8-inch bit to the sand and finished with a six-inch bit, leaving a shoulder on which to land the casing shoe. They were cemented to obtain a tight seal for the bottom of the pipe and to prevent migration of water upward. Others were drilled similarly, but were completed with a string of 2-inch tubing having, for possible salvage purposes later, a left-hand thread just above the cementing point. It was equipped on the lower end with a 2-inch by 7-inch swedge nipple. The sand body in this type of injection completion was filled by tamping river sand to the shoulder. The tubing was set firmly on the sand at a point level with the shoulder, and then, through use of clamps at top, part of the weight was lifted off the swedge. Then a string of 1-inch pipe was lowered in the annular space between the walls and the tubing to serve as a conveyor for cement and immediately withdrawn after injection



Production curve of Peterson and McCarthy's Hardin lease, showing influence of water flooding on daily output of the property.

of about 10 sacks of slurry. When the cement had hardened the 1-inch string was lowered inside the tubing and filtered water was circulated under high pressure to remove the river sand and leave the exposed surface of the exhausted oil sand clean to receive injected water.

Water Supply

There were only two sources for injection water on the Peterson and McCarty lease: the ordinarily salty water from gun-barrel tanks and that obtained through damming Gilbert Creek. The ratio of salt water to oil production on the lease, 5:1, made available 240 barrels, an amount further reduced to about 150 barrels per day when treated to serve injection purposes. The dams impounded about 500,000 barrels.

Water employed for injection in the new wells was conditioned by a combination of filtration, evaporation and chemicals. Lime, copper sulphate and alum were mixed in proportion to the formula prepared for this tiype of water. Alum served to precipitate the impurities.

As the treating system works today, the chemicals are mixed and placed in a small vessel atop a flume elevated above the treating battery. The amount of the mixture entering the water is regulated by a needle valve. Hence, as the flow of water is constant, the proportion of chemicals to water also is kept fairly constant. To obtain a thorough mixture of chemicals with water, both flow through the open top inclined flume, which is the full length of area covered by the treating vessels and which sets up turbulence through a series of regularly-spaced baffles. The flume, or wiggle box, is made of 2 by 12-inch planks. Three rectangular tanks are used to continue the treatment: the first, divided into two equal compartments by a wooden baffle, is to prolong contact between chemicals and water, the second to serve as a settling tank, and the third to serve as a sand filter and pump suction reservoir. Sometimes the fresh creek water is pumped into the sand reservoirs; at other times salt water from the gun barrels is used, and again a mixture of the two is injected. When the latter is the case, the mixture contains the following grains per gallon: calcium carbonate, 11.6; calcium chloride, 128.8; magnesium chloride, 33.2; sodium

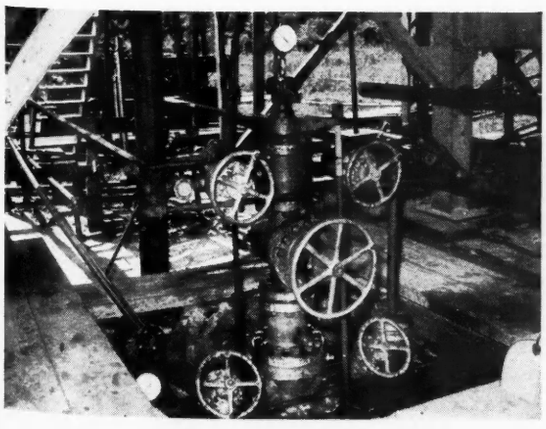
MORE PROOF OF THE EFFICIENCY OF CAMERON TYPE "G" CIRCULATING ANCHOR PACKER

1600 lbs. on the tubing, 150 lbs. on the casing. Again, surface gauges provide positive proof that the Cameron Type "G" Circulating Anchor Packer, set at approximately 6700 feet in a well in the East Baton Rouge Field, East Baton Rouge Parish, Louisiana, has sealed perfectly between casing and tubing.

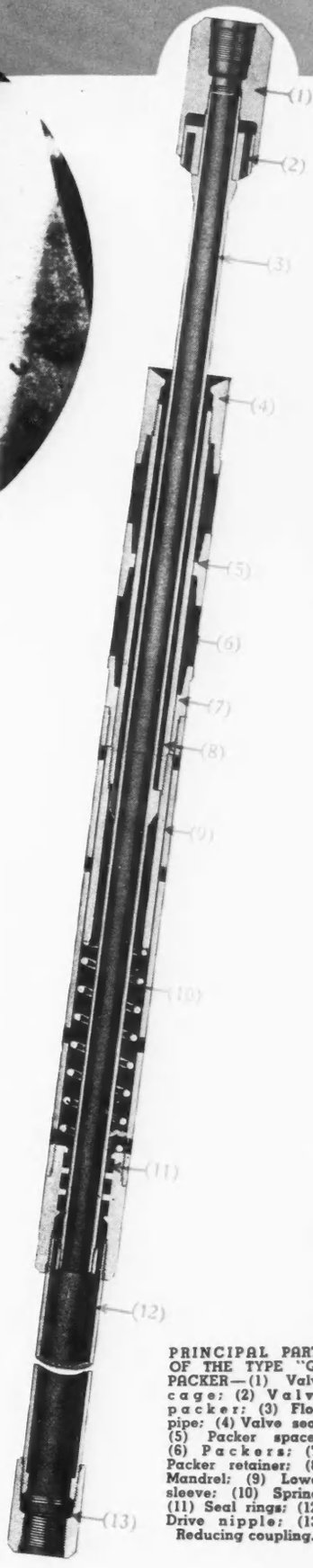
Bottom hole pressure in this well, as in a number of other wells in this field in which Cameron Packers have been set, is estimated at 3600 lbs.

The Cameron Type "G" Circulating Anchor is extremely simple in design and operation. There are no slips, "J"-Tools, or other complicated mechanisms. The packer is set by simply letting off part of the weight of the tubing string. When screen is made up in the anchor pipe below the packer, the entire assembly may be pulled from the well at any time it may be desired to kill the well for plugging back, re-perforating, etc. Should screen be stuck, tubing may be rotated loose directly below the packer, and the tubing and packer pulled from the hole. Screen and anchor pipe may then be washed over and pulled with little trouble or expense. In wells in which the oil string is cemented through the producing sand, and the casing is perforated, a Cameron Type "G" Circulating Anchor Packer may be relied upon implicitly to effect a pressure-tight seal between tubing and casing.

Full information on Cameron Type "G" Circulating Anchor Packers will gladly be provided to interested operators upon request.



CHRISTMAS TREE on Nelson No. 4, East Baton Rouge Field, East Baton Rouge Parish, Louisiana.



PRINCIPAL PARTS OF THE TYPE "G" PACKER—(1) Valve cage; (2) Valve packer; (3) Flow pipe; (4) Valve seat; (5) Packer spacer; (6) Packers; (7) Packer retainer; (8) Mandrel; (9) Lower sleeve; (10) Spring; (11) Seal rings; (12) Drive nipple; (13) Reducing coupling.

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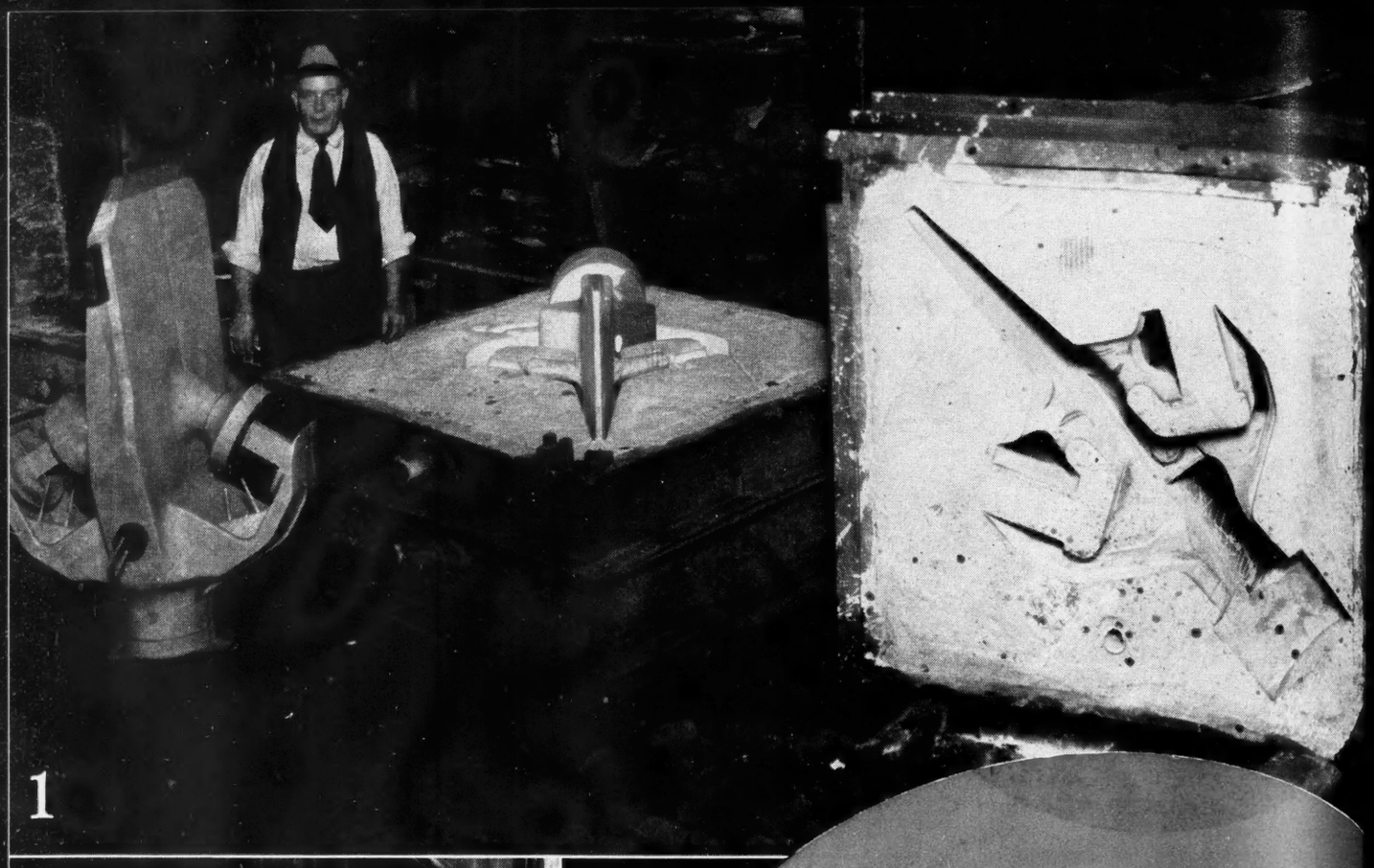

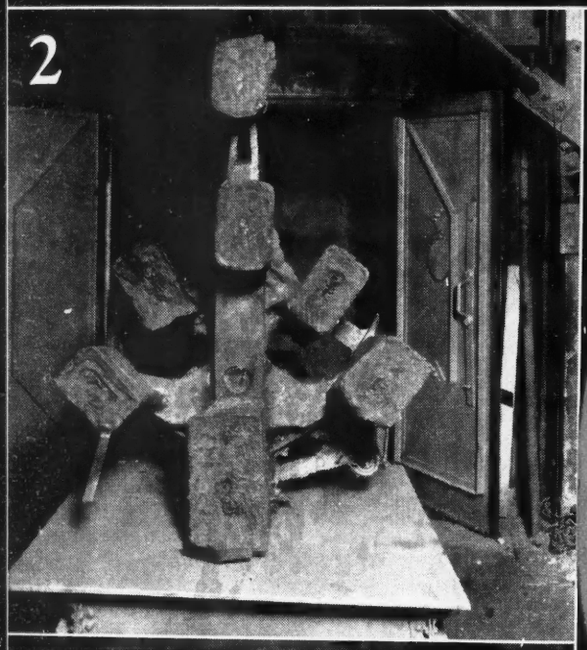

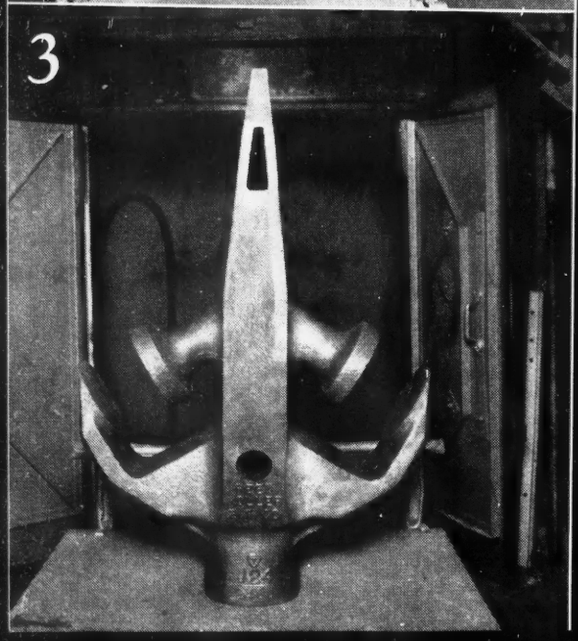

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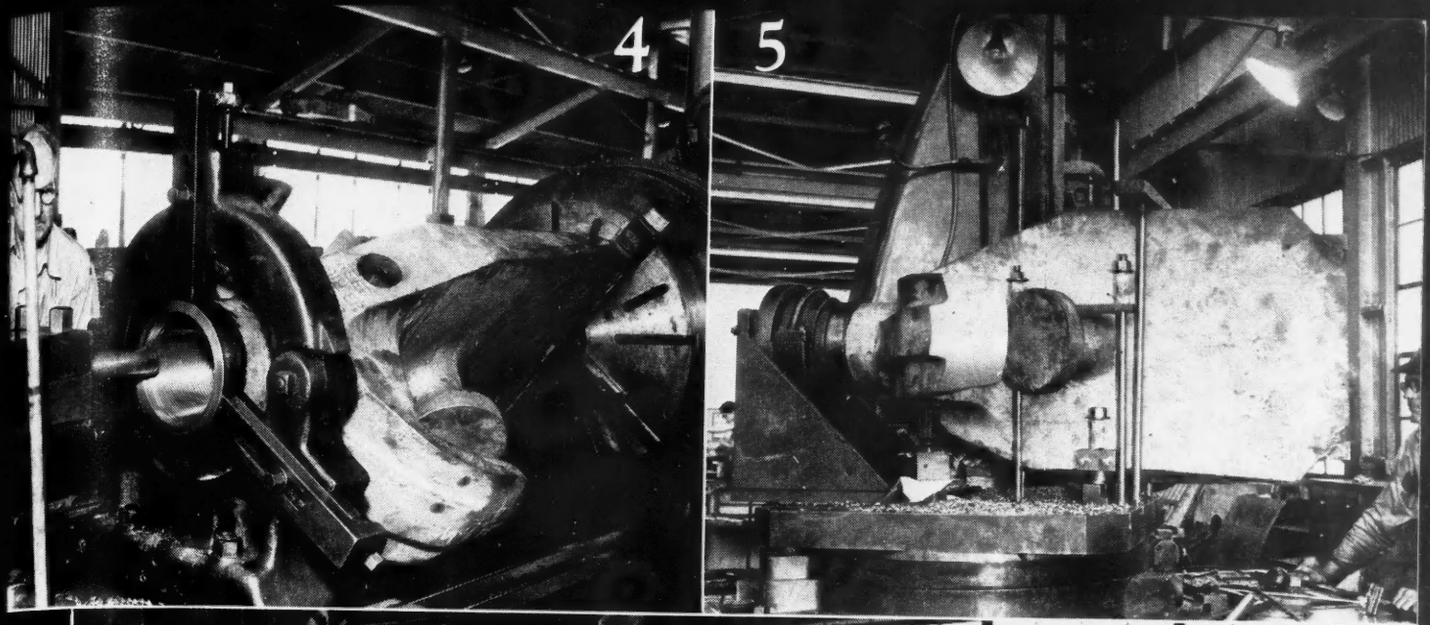
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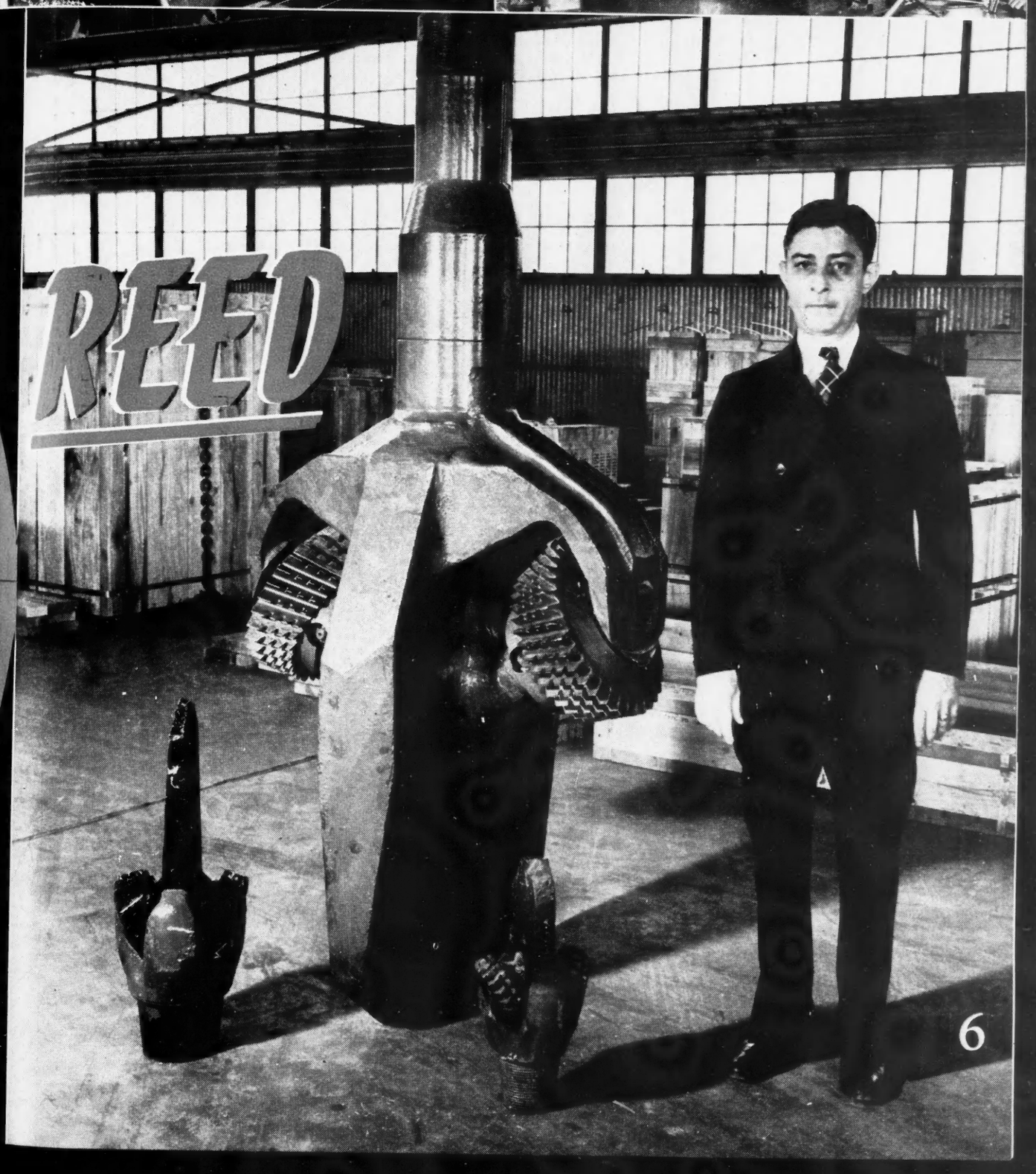
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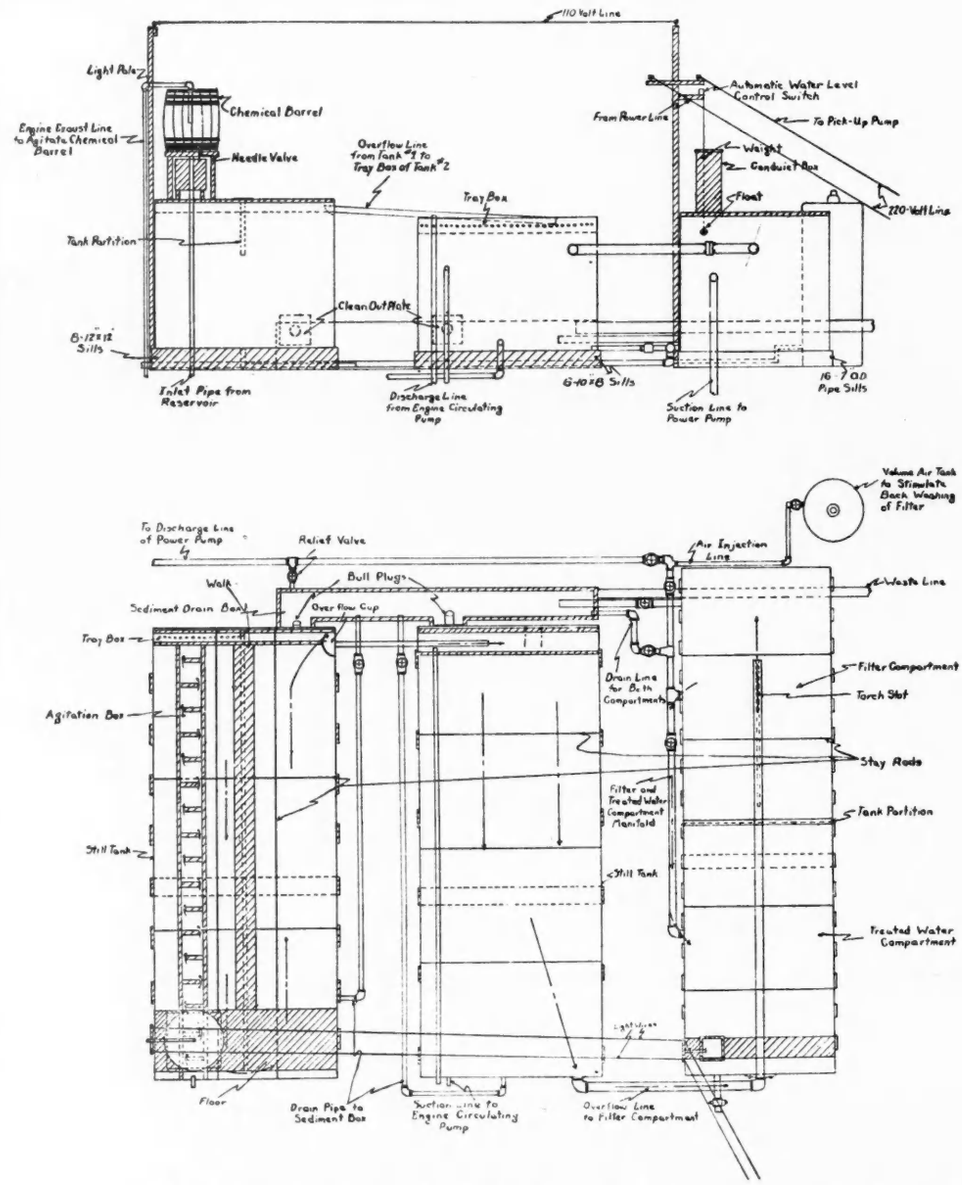
chloride, 543.4; total alkilinity, 11.6; total hardness, 173.6; total solids, 966.69; suspended matter, 0.62; loss on ignition, 0.62; total iron, none; pH, 7.7.

Injection of water on the 60-acre lease started in June, 1936, with 400 barrels divided equally among the eight wells. The amount was increased until a peak of 1100 barrels daily was reached December 1. This rate continued until January 1, 1937, during which month it was reduced rapidly to slightly over 200 barrels daily, due to lack of impounded water and mechanical difficulties in producing wells, which were not sealed at the lower part of the casing to prevent water channeling and escape to the surface through the pipe and walls of the hole.

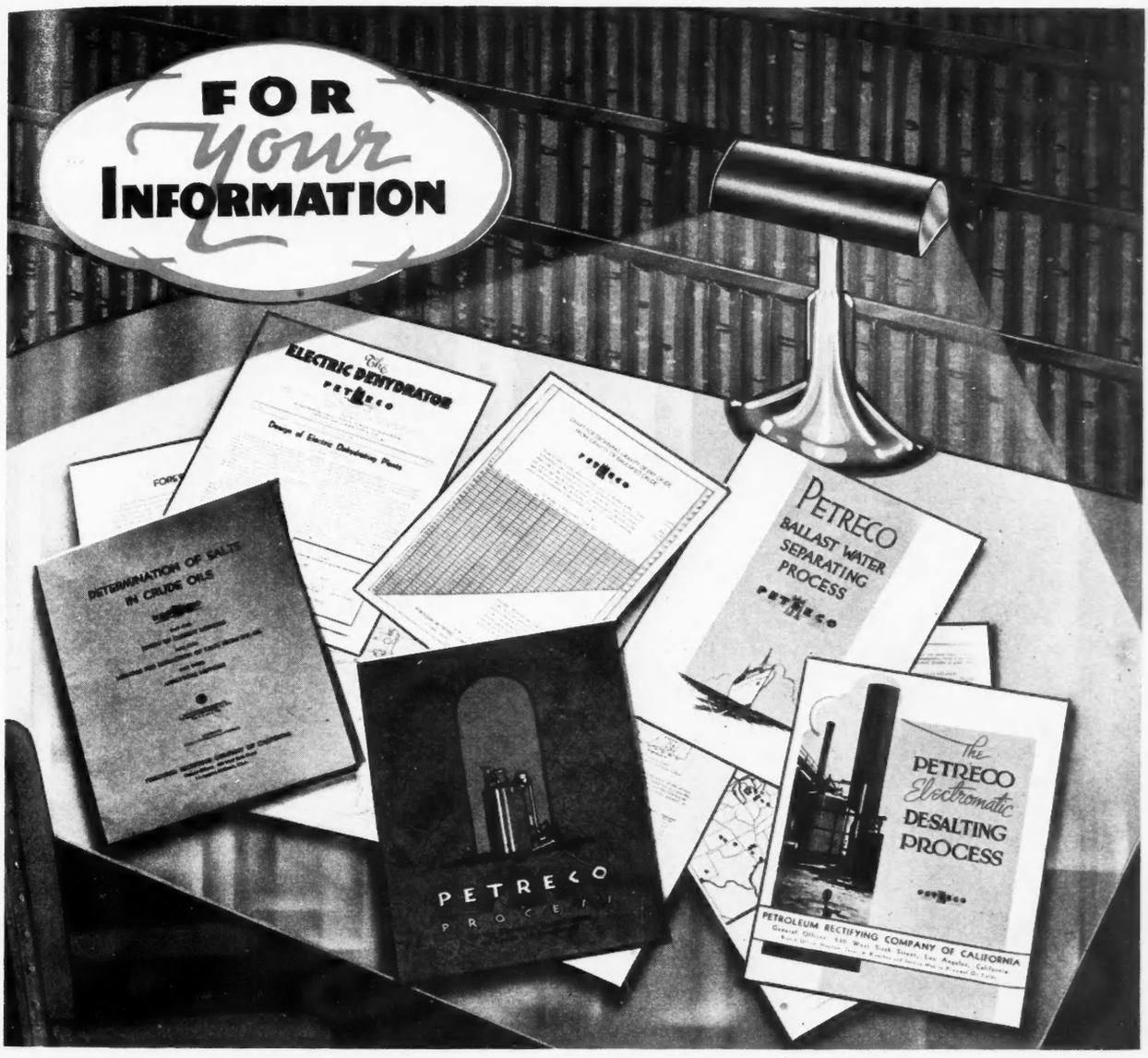
But in spite of the above difficulties an increase in oil production was noted by August 1. During the first 77 days of flooding production climbed to 20 barrels daily. This trend continued until January, 1938, when a peak production of 72 barrels daily was reached.

Between February, 1937, and January, 1938, the volume of input water was increased again to slightly over 800 barrels daily. But a reduction again was forced, caused by water rising from the wells outside the casing. From February through May, 1939, water input was held reasonably constant at 500 barrels per day, although it had dropped to less than 400 barrels daily during the first quarter of 1938. Today it is thought that the current program of injecting 475 barrels daily may be continued without recurrence of the difficulties experienced before.

With reference to oil recovery, it gradually declined from the January, 1938 peak of 72 barrels to January, 1939, when the curve flattened out at 45 barrels daily. Pro-



Water-treating plant for flooding oil sands on Peterson & McCarty's Harding Lease, Wichita County, Texas.



THROUGH years of research and development work Petreco has accumulated what is probably the largest and most complete library of data on the dehydration and de-salting of crude petroleum; and is recognized as an authority on these subjects. In turn, it is a part of Petreco's service to the Petroleum Industry to supply individual oil companies with available information on salt and emulsion problems through special bulletins, "The Electric Dehydrator," and directly by consultations with the Petreco engineering and laboratory departments. No obligation whatever is involved by inquiries, consultations, or preliminary investigations of individual problems. Should you require dehydration or de-salting data at any time, you are cordially invited to call on Petreco for it.

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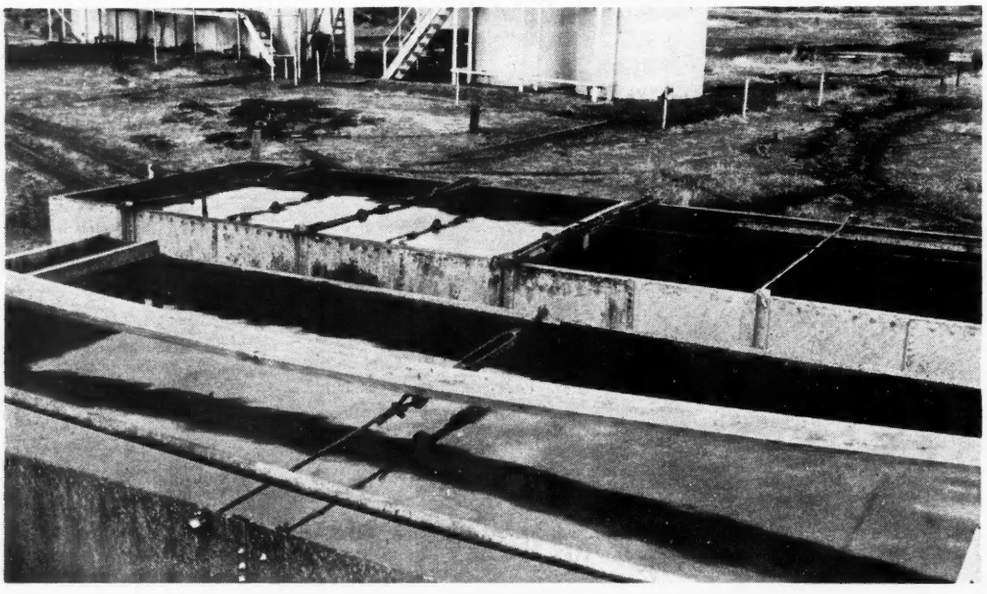
duction from the lease held to that figure for the first five months of 1939.

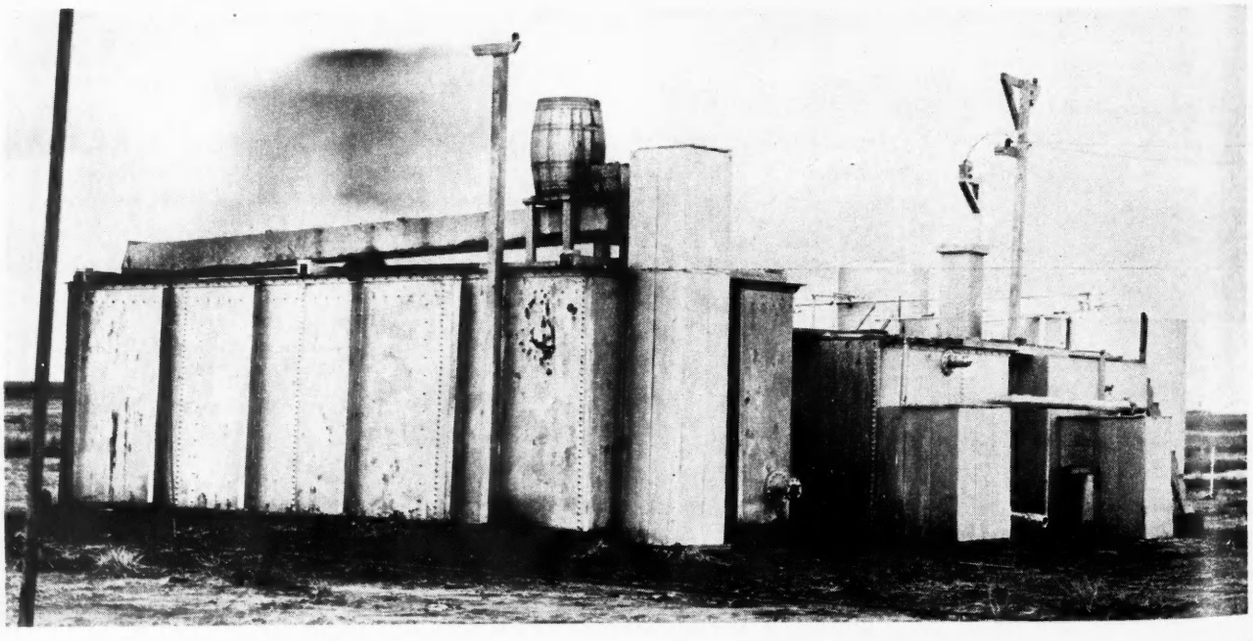
Recovery due to water flooding on the lease has amounted to 50,505 barrels (up to June 1) of oil, obtained through injection of 600,000 barrels of water into the two sands. The ratio of produced oil to injected water is, thus, 1:11. The flood has progressed to a point, in the opinion of the company engineers, where the water has been distributed evenly over the lower portions of both sands. As water rises to the upper portions, residual oil is being forced to pumping wells. In the beginning of the flooding project the ratio of produced oil to produced water was 1:4; now it is 1:5.

There are some incidental observations in connection with operation of the lease. For example, when cleaning the injection wells becomes necessary, some respond to a sudden release of pump pressure by back flowing, bringing the sediment up through the tubing. Others which do not respond in this manner must be flushed. This is done by jetting fresh water under high pressure to the face of the sand through 1-inch tubing lowered to the bottom of the hole, the sediment coming up in the annular space between the permanent and temporary strings. In this connection it has been observed that a sand face which has not been shot with nitroglycerine responds more readily to water jetting.

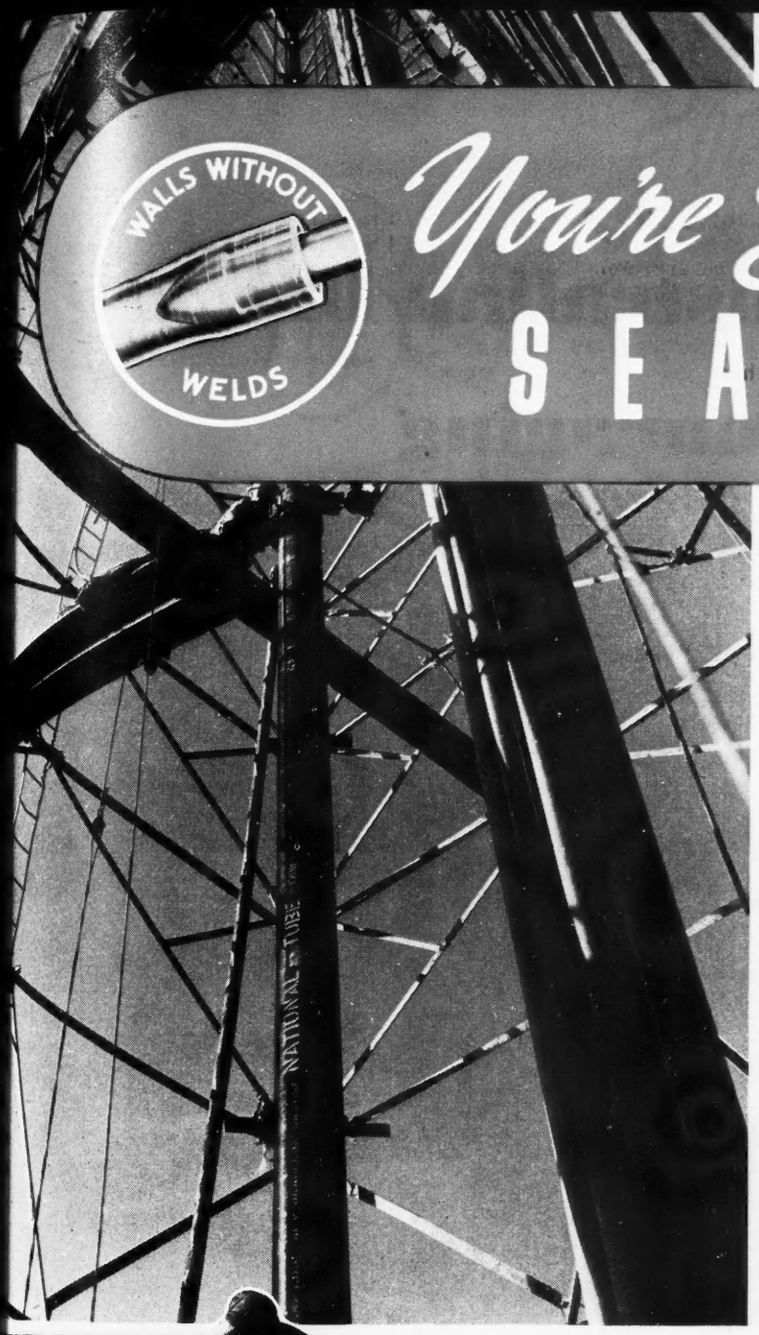
Producing wells on the Peterson and McCarty lease are pumped with tubing raised to the top of the sand so that a minimum amount of water will be lifted. In the first stages of the flood tubing was hung as low as possible, but it has been found advisable to raise it as the fluid level rises.

Another interesting observation has to do with a comparison of the receptivity of the sand for various types of water injected. It has been observed that the brines, after having been treated for removal of suspended matter, enter the sands with as little pressure as fresh water, and in many instances actually require less pressure for introduction than the fresh water.





Water used in the Peterson & McCarthy flood project is treated in the battery pictured below. Chemicals are mixed in the vessel atop the flume above the tanks. A close-up of the flume is shown at left.



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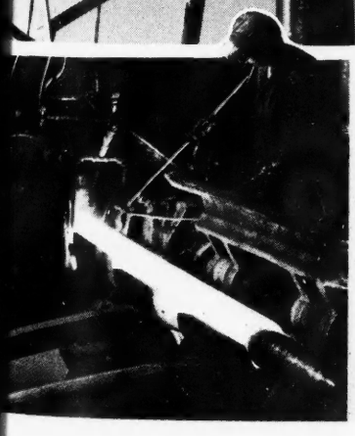

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Results of Australian Drilling Discouraging

THOUGH the federal and state governments of Australia are prone to do what they can to encourage prospecting for oil in that commonwealth, results at the end of 1938 were not too encouraging. This applied to private company drilling as well as to subsidized drilling.

With reference to Victoria, where most of the Australian wildcatting has taken place, W. Baragwanath, director of the geological survey of the mines department at Melbourne, has been kind enough to sum up the situation for THE OIL WEEKLY as follows:

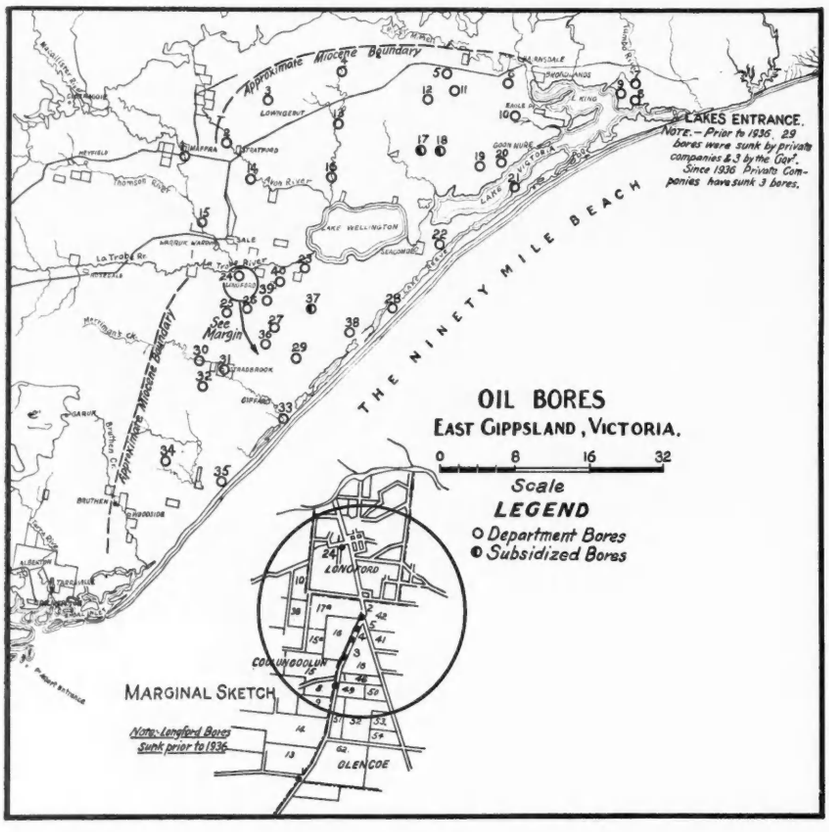
Gippsland

"Operations in the Gippsland area in Victoria were chiefly confined to scout boring under the commonwealth-state scheme. During 1937 the bores were restricted to a depth of 1500 feet, but in 1938 a new rotary plant capable of reaching 4000 feet was erected and a depth of 3246 feet (No. 20 on the accompanying plan) reached. This bottomed on Jurassic bed rock and proves the greatest thickness of Tertiary strata in the area. No indication of gas or oil was met with in the scout bores and no new structural features were located.

Lakes Entrance

"In the vicinity of Lakes Entrance three private company bores were completed and a small amount of oil was bailed, but operations are at present suspended while a suggestion of the federal oil advisory board for repressuring of the field is under consideration."

Baragwanath attached to the above communication a table showing all the holes put down thus far in the above referred to sections of Victoria. Because it is the first table printed in America to give



Showing location of the 38 wells on which logs are given in the accompanying table on the next page. Map courtesy Victorian Mines Department.

"Beauty"

-That's More Than Paint Deep!

Sure, it's a pretty job. But it wasn't bought for its beauty. Most any pumping unit will make an attractive picture, given the right background . . . and a new paint job. The "beauty" about this unit is that it has been running a long time . . . has produced a lot of oil . . . and has never cost its owner a cent for repairs or lost time. And the dependable, trouble-free performance of this unit didn't just happen. There are Parkersburg pumpers, of this and other types, making equally good records throughout the oil fields of the world. Check, with any user, the fine features of Parkersburg pumping unit design and construction; then ask yourself this question: "Can I afford NOT to buy this pumping unit quality?"

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the logs of all Victorian wells, it is published herewith.

Victoria, however, is not the only part of Australia that has been subjected to wildcat drilling. On the western shore of Australia there is a region referred to as the Northwest Basin, and on the northwestern coast is another called the Desert Basin or the Kimberley Area. Then over in the eastern part of the country is the Roma-Springsure area, where some wet gas has been obtained. South of this is the Sydney Basin, in which is located the city of that name.

Eric Rudd, geologist, in speaking of the Desert Basin describes it as an extensive province of Permo-Carboniferous rocks where arid conditions and inaccessibility make geological work difficult. "Inconclusive tests have been drilled in the past and small shows of oil reported," he says.

Northwest Basin

In the Northwest Basin the geologic column is made up of Paleozoic, Mesozoic and Cenozoic rocks. Well defined domal structures are apparent in the Tertiary.

In addition to the above two prospective areas, there has not been enough drilling done to completely condemn the Roma Springsure area, which is heavily dissected, rugged, inaccessible, sparsely settled and covered with scrub and forest.

For additional information on prospective areas of Australia, the reader is referred to the following issues of THE OIL WEEKLY: June 24, July 8, August 12, September 30, November 11, 1935; January 27, February 10, May 11, June 1, August 3, November 2, 1936; February 22, September 27, 1937; February 21, May 23, June 13, June 27, August 15, and September 12, 1938.

Log of Wells Drilled in Victoria, Australia

Data furnished by W. Baragwanath, director of Geological Survey, Mines Department, Melbourne

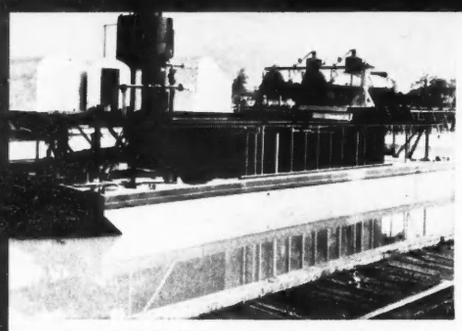
Bore No.	Surface Level (Feet)	Depth (Feet)	PARISH	Pleistocene (Feet)	Upper Pliocene (Feet)	Lower Pliocene (Kalimnan) (Feet)	Upper Miocene (Feet)	Middle Miocene (Feet)	Lower Miocene (Feet)	Upper Oligocene (Feet)	Lower Oligocene (Feet)
1	.....	606	Bundalaguah No. 1	.....	.....	.....	.....	.....	.....	.....	64–606
2	.....	650	Bundalaguah No. 2	.....	362–609	.....	.....	.....	.....	610–650 (base)	.....
3	298.5	665	Stratford No. 1	.....	.....	.....	.....	.....	220– 480	489–510	530–590
4	200.8	533	Nindoo No. 1	.....	.....	.....	.....	.....	82– 452	475–530	.....
5	152	640	Coongulmerang No. 2	.....	.....	64–131 (C2, 64)	146–192	.....	207– 597 B3, 207–299; B2, 310; B1, 325–597	624	640
6	.....	904	Bairnsdale No. 3	0–10	.....	20–80	90–100	110–450	460– 790 B3, 460–530; B2, 540–550; B1, 560–790	800–860	866
7	5.00	949	Bumberrah No. 2	.....	.....	.....	.....	.....	.....	.....	.....
8	2.00	1449	Bumberrah No. 1	.....	.....	60–240	240–285	290–1100	1115–1155	1165–1370	.....
9	5.00	1226′ 6″	Bumberrah No. 3	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	In progress	Bairnsdale No. 4	.....	.....	.....	.....	.....	.....	.....	.....
11	175	1022	Moormurng No. 1	.....	.....	210–308 (C2, 230)	317–338	350–578	590– 950 B3, 590–613; B2, 622–635; B1, 645–950	956–1021 (base)	.....
12	185	945	Coongulmerang No. 1	.....	210	220–570 (C2, 250–280)	580–620	630–680	690– 930 B3, 690–780; B2, 790–830; B1, 840–930	.....	.....
13	102.69	1208	Meerlieu No. 1	.....	.....	.....	.....	260–590	600–1154 B3, 600–700; B2, 710–720; B1, 730–1154	1163–1208	.....
14	41.16	1453	Nuntin No. 1	.....	199–538	.....	.....	.....	666–1338 B3, 666–846; B2, 852–909; B1, 920–1338	1345–1452	.....
15	.....	In progress	Bundalaguah No. 3	.....	.....	.....	.....	.....	.....	.....	.....
16	25.89	1345	Yeerung No. 1	.....	114–290	380–505	.....	551–990	1000–1340 B3, 1000–1130; B2, 1140–1240; B1, 1250–1340	.....	.....
17	105	924	Oil Search No. 1 (Bengworden)	.....	.....	425–640 (C2, 470–480)	.....	650–924	.....	.....	.....
18	75	1087	Oil Search No. 2 (Bengworden)	.....	.....	324′ 6″–500 (C2, 425)	.....	510–1080	1087	.....	.....
19	95	2930	Amal. Oil Syn. No. 1 (Goon Nure)	No sample	No sample	No sample	No sample	No sample	1380–2010 B3, 1380–1550; B2, 1703–1740; B1, 1750–2010	2020–2687 last sample	.....
20	100	3246	Goon Nure No. 1	.....	100–397	500	.....	610–1135	1235–1826	1960–2580	2632–3125[1]
21	10	2311	Valve Oil Wells, Ltd. (Pelican Pt.)	.....	.....	.....	.....	.....	.....	.....	.....
22	16	1570	Seacombe No. 1	10–370	.....	380–860	870	880–1570	.....	.....	.....
23	10	1406	Glencoe No. 8	10–410	.....	420–650	660	670–1350	1360–1406—B3, 1360	.....	.....
24	65.5	190	Longford No. 1	.....	.....	.....	.....	.....	.....	.....	.....
25	300	215	Glencoe Sth. No. 1	.....	.....	.....	.....	.....	.....	.....	.....
26	290	1400 (Jurassic)	Tanjil Pt. Addis No. 1 Glencoe Sth.	.....	.....	.....	.....	.....	B2, 570–600	.....	.....
27	.....	923	Glencoe Sth. No. 2	.....	.....	180–222	.....	.....	.....	.....	.....
28	15	1616	Dulungalong No. 1	.....	10–270	280–560	570–580	590–1270	1280–1616 B3, 1280–1580; B2, 1590–1616	.....	.....
29	.....	1420	Wulla Wullock No. 2	20–310	.....	320–437	450–500	515–1050	1060–1420 B3, 1060–1265; B2, 1275–1420	.....	.....
30	170	647	Stradbroke No. 15	.....	.....	.....	.....	.....	45–130	155–570	610–640
31	130	1476	Stradbroke No. 16	.....	.....	200–480	490–500	510–580	590– 990 B2, 610–640; B1, 650–990	1000–1476 (base)	.....
32	130	1505	Stradbroke No. 14	.....	.....	130–405 (C2, 190)	415–465	475–595	.....	.....	.....
33	10	1600	Giffard No. 14	.....	60–210	216–665	680–693	700–1358	1365–1600 B3, 1365–1530; B2, 1535–1600	.....	.....
34	.....	1207	Darriman No. 3	.....	.....	62–88	98–141 (?)	149–289	299–1069 B3, 299–369; B2, 379–559; B1, 569–1069	1079–1207	.....
35	10	1250	Darriman No. 4	2–200	.....	210–410	420	430–1175	1180–1240—B3, 1180	.....	.....
36	136	2760 (Jurassic)	Tanjil Pt. Addis No. 2, Glencoe South	0–176	.....	176–295	.....	310–524	524– 900 B3, 524–560; B2, 560–650; B1, 716–900	968–1303	1303–2723[2]
37	175	2217	L. Wellington Oil Wells (Glencoe South)	.....	.....	70–238	275–306	312–503	522– 915 B3, 522–556; B2, 560–712; B1, 720–915	935–1248	1250–2217 (base)
38	93	2200	Signal Hill No. 1 (Dulungalong)	.....	.....	300–650	.....	742–1129	1573–1781 B2, 1575–1630; B1, 1639–1781	1822–2237	2240–2295

[1] 3158′–3244′ 6″ Jurassic. [2] 2725′ Jurassic.

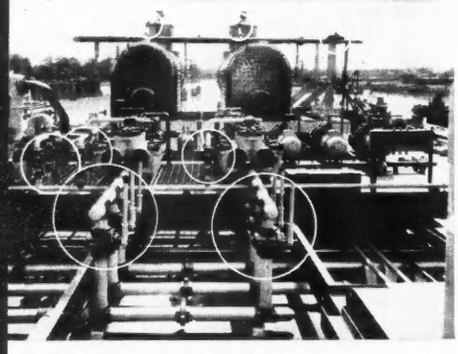
. . . Not a Leak in an Ocean

Terminating in the briny Pacific, almost a half mile from the California shore, a 16″ pipe-line carries crude oil to deep water to load tankers. Drastic laws warn against contamination of the water. A tight shut-off was imperative. Corrosion had to be thwarted, too. Valves with exposed, threaded stems were inadequate. Only a Nordstrom Lubricated Valve could serve the need—and it has served for years. It provides an absolutely *blind* ending for the 12″ flexible hose which connects to the 16″ submerged oil line. Not a drop of oil can leak out; not a drop of salt water can intrude. The hydraulic seal of lubricant which completely envelops the plug ("Sealdport" patent) makes the Nordstrom Valve *impervious* to leaks—regardless of line contents—for oil, gas, air or chemicals. It's the *all-purpose* valve for *your* service.

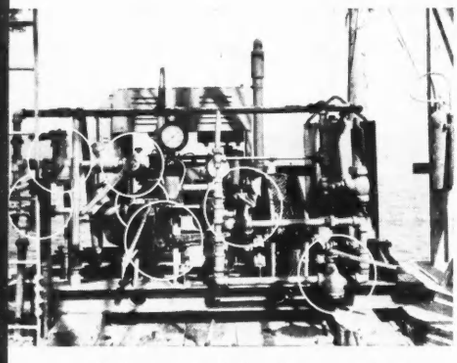
NORDSTROM VALVES



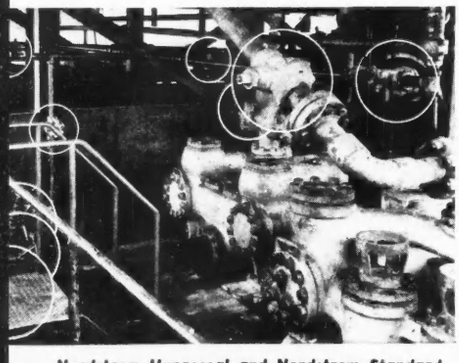
Barge used in drilling operations, equipped with Nordstrom Valves.



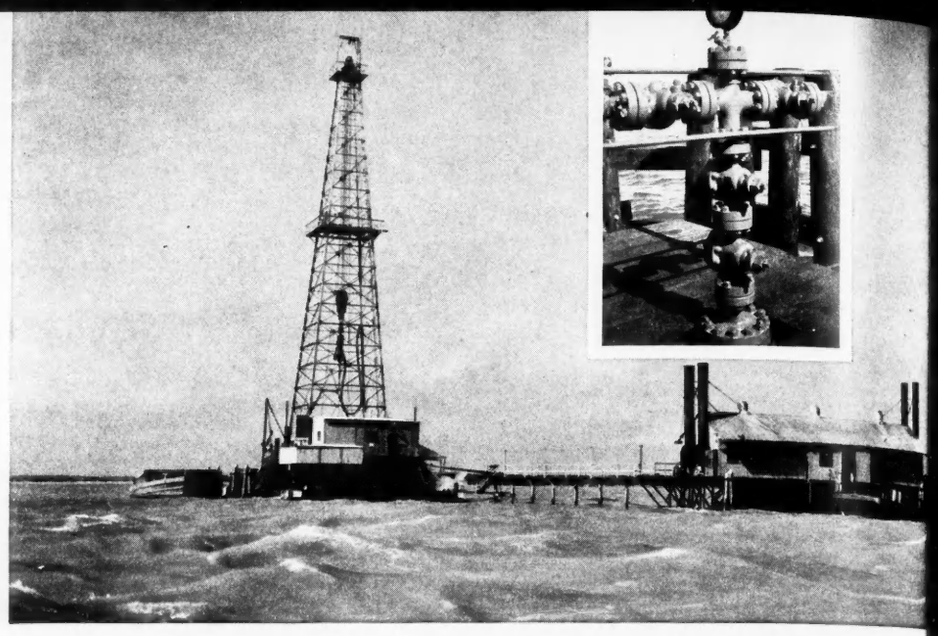
Boilers and manifolds are Nordstrom-equipped.



Mud pump manifold on barge, showing Nordstrom Valves.



Nordstrom Hypreseal and Nordstrom Standard Valves on mud lines on barge.



View of typical drilling operation in Gulf Coast area and completed Nordstrom Valve-equipped Christmas tree.

BARGE DRILLING and MARINE OPERATIONS *require* NORDSTROMS

The drilling of wells in bays and navigable waters of the Gulf Coast is increasing in importance. These are drilled principally from piling substructures or from a submersible barge. Outstanding is the impression one gains of the order and precision with which the work is conducted. Every effort is directed to avoid any practice or accident that would result in pollution of the bay waters. Every valve must hold tight. There dare be no spills of mud or oil that would contaminate the waters. Compactness, too, is an important feature.

In the beginning of barge drilling and marine operations Nordstrom Lubricated Valves were, and continue to be, first choice. They are standard equipment in the majority of instances – for suction lines, slush pump lines, stand pipe, boiler lines, rotary hose shut-off, air lines–wherever valves are needed. They are part and parcel of barge drilling–clean, leak-proof, quickest to operate – and unquestionably the safest. All parts are well protected against the corrosive action of the salt water. Nordstroms are all-purpose valves.

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WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Mexican Developments

United States serves notice that further dispute with companies over expropriation of properties may result in discontinuing commercial relations

Serving notice upon the Mexican government that the failure of recent negotiations for settlement of the controversy over oil property expropriations does not relieve it of its responsibility for promptly reaching a satisfactory solution of the problem, the State Department at Washington on August 14 warned that continuance of the dispute may lead to disruption of "beneficial commercial relations" with that country.

The controversy became the subject of a "white war" of publicity when Mexican Ambassador Francisco Castillo Najera on August 16 issued a statement expressing the viewpoint of his government and outlining the basis on which it would negotiate.

While the department's exposition of its position made no reference to the fact, it is known that reports reaching Washington in recent weeks have disclosed that there is great dissatisfaction and unrest among the oil workers of Mexico over the less favorable conditions under which they now must work.

Furthermore, it was pointed out in interested circles, Mexico is due to have a presidential election in July of next year, and the department's warning was taken as notice to President Cardenas that unless he settles his differences with the oil companies he will not be able to claim for the successor he is expected to name that he is in the good graces of the Washington administration.

In a formal statement reviewing the history of the expropriations, Acting Secretary of State Sumner Welles revealed that the department was the author of the latest proposal, providing for management of the oil properties by companies on which the former American owners and the Mexican government each had three representatives, with three neutral representatives selected by the two groups jointly. Nor did Welles make any secret of the disappointment of the department that both President Cardenas and the oil companies promptly turned the proposal down.

Veiled Threat

Couched in diplomatic language, the department's statement made no direct threats as to what the United States government might do in the event that Mexico failed to continue negotiations, but pointed out that "continuance of the dispute not only will dislocate still further beneficial commercial relations between Mexico and the United States * * * but, more important still, it will constitute a material barrier to the maintenace of that close and friendly understanding between Mexico and the United States which both governments regard as in the best interests of the two peoples."

There are a number of steps which the Administration might take to make the Mexican government feel the weight of its displeasure, one of the principal ones being the discontinuance of the purchase of Mexican silver, which would immediately cut off a large and very important part of Mexico's income.

Pointing out that the expropriation decree of March 18, 1938, was similar in nature, "although involving investments of far greater magnitude," to the previous expropriations of farm and other properties of American citizens, Acting Secretary Welles explained that an agreement made last November for the compensation of the American land owners was a recognition by Mexico of this government's position that "in the exercise of the admitted right of all sovereign nations to expropriate private property, such expropriation must be accompanied, in accordance with the recognized principles of international law, by provision on the part of the government of Mexico for adequate, effective and prompt payment for the properties seized."

"Immediately following the action taken to expropriate the petroleum properties belonging to American citizens," he said, "this government informed the Mexican government of its expectation that prompt compensation would be made in the form of just and effective payment to the extent of the fair and equitable valuation of such properties. This government's position is firmly based not only on well recognized rules of international law; the elemental considerations of justice and of fair dealing which should govern the relations between nations demand such payment for the properties taken. The attitude of applying the principles of established international law in the solution of this problem has been consistently maintained by every official of the United States government in its representations to both parties to the controversy throughout the period of the discussion. Furthermore, the close and friendly understanding which this government desires to continue to maintain with the government of Mexico requires the reciprocal assurance on the part of both governments that their relations will in fact be governed by such principles of justice and of fair dealing.

Mexico Admits Liability

"In the decree of expropriation itself and on numerous occasions subsequently, the Mexican government recognized its liability to make compensation and stated its willingness to discuss terms with the petroleum companies concerned. Since that time there have been discussions between representatives of the Mexican government and of the petroleum companies in an endeavor to come to some fair and equitable agreement. This government has continuously and consistently sought to facilitate and to further these negotiations by conferring with both sides, first with one and then with the other. For a time the conversations between both parties proceeded satisfactorily, appearing to hold promise of an eventual solution. A set of bases of discussion, within the scope of which there might be found an agreement for the future operation of the industry, were believed to be determined, but recently a serious obstacle to final agreement was encountered. In this situation this government, without prior consultation with either party, and in accordance with its repeatedly demonstrated desire to further an agreement, informally laid before both parties a suggested solution of this obstacle, without requesting or receiving any commitment or obligation on the part of either party to accept it."

Board of Nine Proposed

That proposal, it was explained, was designed to overcome the deadlock occasioned by the claim of both the Mexican government and the oil companies that they alone must control the management and operation of new companies which it had been agreed in principle might be established to oper-

ate the seized properties. It contemplated a board of directors for each such company to be composed of nine members, three appointed by the Mexican government, three by the petroleum companies and three elected by the two parties from a panel of nine drawn up in mutual agreement by the governments of Mexico and the United States.

In order to attain complete impartiality on this panel of nine, no persons were to be included who came from any country whose citizens had a direct and important interest in any of the oil companies involved, and all were to be of demonstrated integrity and standing, and of practical experience in commerce, finance or in the oil industry itself.

"This proposal seemed to offer a temporary middle ground on which the Mexican government and the petroleum companies could have met with the balance between them resting in the hands of impartial and competent persons," Welles pointed out.

"This government naturally regrets that a proposal suggested for no other purpose than to reconcile a major difference of approach which threatened a breakdown in the present negotiations should have been discarded by either party without the fullest exploration of its possibilities, especially when both parties fully comprehended the purpose for which it was put forward.

Under the circumstances, it was said by the acting secretary, who revealed that he had discussed the situation with Secretary Hull before issuing the statement, the United States government will stand firm in its demand for settlement.

United States Takes Firm Stand

"It is of course evident that a solution of this controversy must be found in accordance with the basic principles of international law, as this government has invariably insisted at every step of the present negotiations," he said. "A continuance of the dispute not only will dislocate still further beneficial commercial relations between Mexico and the United States, with great economic losses to both countries, but more important still, it will constitute a material barrier to the maintenance of that close and friendly understanding between Mexico and the United States which both governments regard as in the best interests of the two peoples.

"The discontinuance of the present discussions can of course in no sense relieve the Mexican government of its obligation to make prompt, adequate and effective compensation for the petroleum properties which have been taken, if the expropriation is to be regarded as valid. At the same time, however, this government expects that its own citizens with direct interest in this controversy will give the most ample and attentive consideration to all constructive proposals that are advanced to overcome the difficulties now standing in the way of a fair settlement of the controversy which exists. In the rapid, fair and equitable solution of this controversy, the interests of their government are directly concerned."

In his statement, Ambassador Najera, asserting that W. S. Farish, president of Standard Oil Company of New Jersey, had announced the companies' rejection of the State Department proposals before the Mexican government made any pronouncement, charged that the oil companies had given out details of the proposal and had misrepresented the manner in which the 9-member boards of directors would be selected in such a way as to lead to an adverse public reaction in Mexico.

The Mexican government, said the ambassador, outlined on August 2 the basis on which it would negotiate a settlement with the companies. Those proposals, he explained, could be summarized as follows:

"The Mexican government is willing to make just and effective payment of compensation to the oil companies. It has repeatedly invited the companies to send representatives for the preparation of the appraisal necessary for that purpose.

"The government of Mexico, in an endeavor to reach a mutually satisfactory settlement, has offered the companies a plan of collaboration for the exploitation of the expropriated fields; under this plan, a long-term contract would determine the proportion of earnings to be received by both parties. These proposals were handed to Mr. Richberg on August 2, 1939.

"The Mexican government is willing, should the companies prefer, to deliver to them the oil for export, including the oil produced as a result of investments made by the government prior to the expropriation, granting the companies a discount that will enable them to amortize the capital invested and also obtain a reasonable profit.

"Finally, should the companies consider that the above proposals are not feasible, the Government of Mexico insists on making payment in cash of a fair compensation after appraisal has been made."

The ambassador explained that such appraisal would relate only to the properties of the companies on the surface and would not include the oil lands themselves, which the Mexican people feel belong to them, adding however, that the companies have never conceded this.

He explained that the several proposals offered by his government on August 2 for consideration of the companies have never been replied to, and that he had not seen Donald Richberg, counsel for the companies, for a week, at which time he was to ascertain from the companies whether negotiations should be resumed.

Studying potentialities of Turner Valley

Potentialities of the Turner Valley oil field in southwestern Alberta and the possibility of developing supplementary fields in the western foothills are currently being investigated for the Canadian federal government by Dr. Charles Camsell, Dominion deputy minister of mines and resources.

The Dominion government, it was explained at Ottawa, is anxious to secure the best possible information regarding potential production in Alberta, in view of widely differing estimates, before giving its blessing or active cooperation to proposed construction of a crude oil pipe line outlet from Turner Valley to Eastern Canada.

New Jersey's Venezuela production at new high

Sudsidiary companies of Standard Oil Company of New Jersey operating in Venezuela report total production for July at 8,985,887 barrels, or a daily average of 289,867 barrels. The month's production, not inclusive of interests of International Petroleum Company, constitute a new high record. Standard Oil Company of Venezuela, a subsidiary of Creole Petroleum Corporation, reported July production of 2,980,162 barrels, or 96,134 barrels daily; while Lago Petroleum Corporation's production was 6,005,725 barrels, or 139,733 barrels daily.

Production in Argentina shows sharp gain

State Oilfields of Argentina reports petroleum production for the first six months of the current year at 205,583,000 gallons, representing sharp gains from the 181,030,000 gallons for the first half of 1938 and the 163,810,000 gallons for the corresponding period two years ago.

The South American country's consumption of petroleum has risen steadily from 849,085,000 gallons in 1932 to 1,337,097,000 gallons last year. The country produced 53.64 percent of the past year's consumption, and imported 46.36 percent.

Government-owned oil fields produced 53.66 percent of the country's production for the first half of this year. Of the total increase in production, State Oilfields accounted for 84.14 percent while privately owned companies contributed 17.86 percent of the increase.

Third oil showing found in Lobato, Brazil, test

Lobato, an area in the state of Bahia, Brazil, which last year gave promise of becoming that country's first commercial oil field, received additional encouragement recently from showings encountered in No. 163. (Previously drilled wells in the neighborhood had failed as oil projects or were drilled for the purpose of obtaining water.)

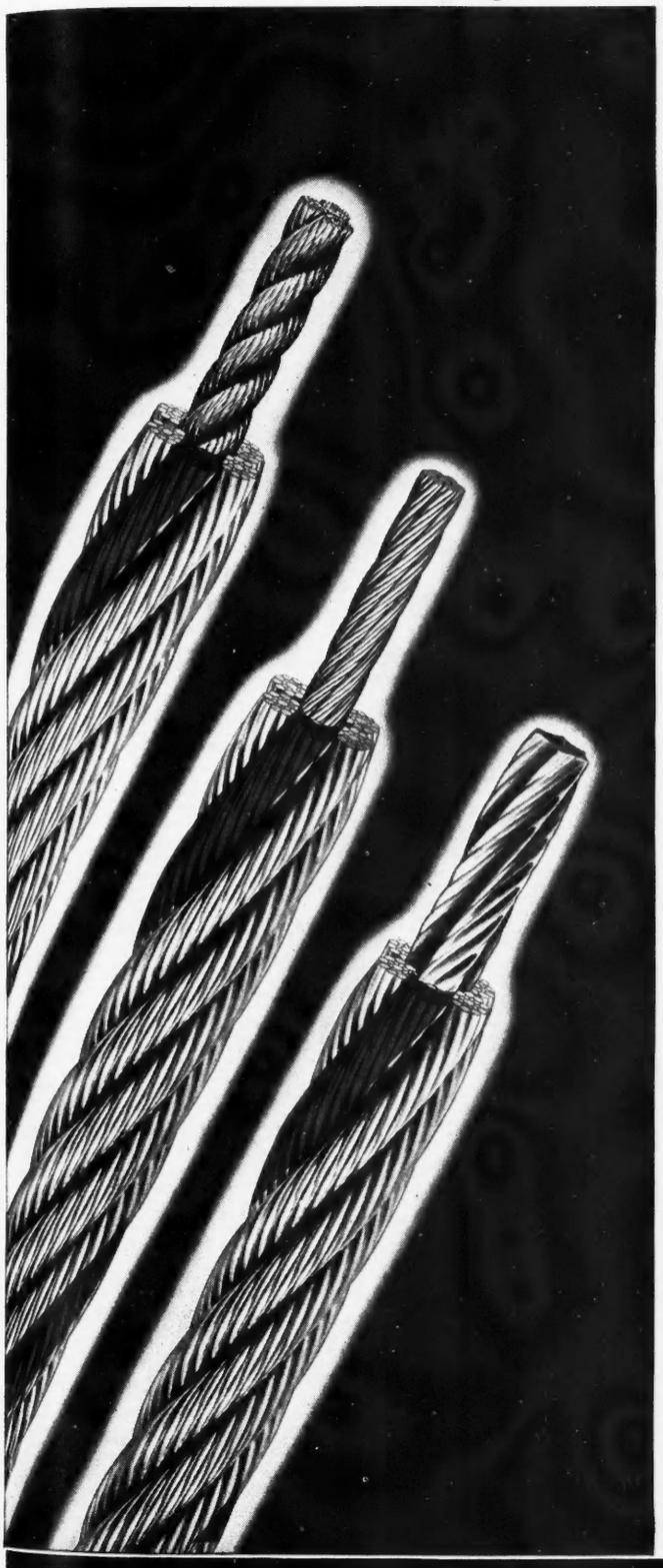
A communication received August 8 stated that between 226.12 meters and 227.28 meters a third layer of sandstone containing oil and gas was found. The two higher showings, both encountered below 214 meters, consisted of sandstone also—one being 1.71 meters thick and the other, 1.35 meters thick.

Casing set in Lobato 163 consists of 3.23 meters of 10-inch, 60.2 meters of 8¼-inch, 150.09 meters of 6¼-inch, and 214 meters of 4¾-inch.

Additional information from Carlos R. Vegh-Garzon, general manager of Administracion Nacional Combustibles, Alcohol y Portland at Montevideo, Uruguay, advises exploratory drilling on Brazil's Reconcavo prospect will be done by Drilling & Exploration Company of Los Angeles, with J. E. Brantley supervising the work. This is the same organization responsible for completion of the discovery well on Blue Goose Oil Company's Pachitea concession in Peru.

PURPLE-STRAND **FORM-SET** ROTARY LINE

BETHLEHEM Specify FORM-SET PRE-FORMED ROPE



A choice of 3 centers

Hemp. This is the hard, tough core of hemp or other fiber that has been standard for many types of ropes for years. The core of Bethlehem rotary lines is specially lubricated with a compound that keeps the fiber pliable and resistant to moisture. This type of core is widely used in lines where highest strength and resistance to crushing are not required.

IWRC. For heavy loads, nothing can take the place of an independent wire-rope center. It adds to the strength of the rope. It greatly increases resistance to crushing and distortion, both on the drum and over the sheave. While the rope is stiffer to handle, it is just as flexible under load and because of its resistance to crushing it receives less damage in running over small sheaves than fiber-center rope. Bethlehem uses a specially designed wire rope as the center, an independent rope made just as carefully and with just as great precision as the rotary line itself. It carries its own specially compounded lubricant; in Form-Set line, the center is also pre-formed. Strands are accurately fitted around it to give full, adequate bearing surface. The cost is 15 per cent more.

Uni-Zact. Here is a core with proven advantage for rotary lines. It is a firm, smooth core made up of continuous flat strips of a parchment material, twisted into a uniform, continuous cylindrical center. It is more uniform in firmness and diameter than fiber. It gives better support to strands, thereby increasing life of the rope. Special lubricants make it water-resistant, rot-resistant and unusually tough. Experience has shown that a Uni-Zact core rotary line will often stand up on operations too severe for hemp-center line, yet the original cost is the same.

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MEN IN THE INDUSTRY'S NEWS

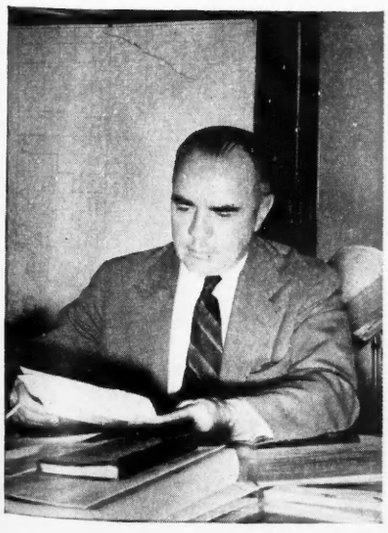
J. M. (JACK) **LOFFLAND** of Fort Worth, vice president of Loffland Brothers Company, drilling contractors, is president of a new corporation formed to erect a $1,000,000 housing project, which will consist of residences and apartment buildings in a separate village on the northwest edge of Fort Worth.

L. G. **HUEY,** scout for Magnolia Petroleum Company in the Shreveport district, has been transferred to Mattoon, Illinois. He will be succeeded by Robert Harless.

LIEUTENANT COMMANDER W. H. OSGOOD, U. S. Navy, Retired, has recently been recalled to active duty for special work as Inspector of Naval Petroleum Reserves in California. He will relieve Captain William G. Greenman, who is returning to sea duty.

Osgood, following graduation from the Naval Academy at Annapolis, and considerable sea service, took post-graduate work at Columbia University, receiving his Master of Science degree. He then studied at University of Pittsburgh, where he received his degree of petroleum engineer, after which he served for some time as Inspector of Naval Petroleum and Oil Shale Reserves in Wyoming, Colorado and Utah. He was instrumental in developing and starting a course in laboratory research for the navy department on the subject of fuel oil for the navy. He retired from active service in 1932.

After a period spent as engineer in the office of the California Oil Umpire, Commander Osgood entered private practice as a consultant, specializing in production engineering problems and offering a service to the California oil industry in the measurement of sub-surface pressures. Among his technical publications is a two-volume work entitled "Increasing the Recovery of Petroleum" (McGraw-Hill Company) and numerous papers on the subject of sub-surface pressures.



W. H. OSGOOD

GEORGE GOAD, head of the crude oil purchasing department of Tide Water Associated Oil Company, at Houston, is vacationing in Mexico City.

DAN CAMERON, scout for Carter Oil Company at St. Joseph, Missouri, has been moved to Saginaw, Michigan, to open scouting headquarters.

HARRY LEYENDECKER, chief scout for Tide Water Associated Oil Company returned to Houston after a vacation spent in Mexico.

RUSSELL P. JOHNSON and Oscar Kaufman, both of Olney, Illinois, and Eugene C. Wharf, of Vincennes, Indiana, last week organized Stanford Oil & Gas Company as an Illinois corporation. The firm has established offices at Olney.

R. B. MITCHELL has been appointed Louisiana-Texas division geologist for Stanolind Oil and Gas Company, succeeding Louis C. Roberts, Jr., who resigned to enter private consulting practice.

GUY B. RENEAU, engineer with Tide Water Associated Oil Company, has been transferred from Tyler, Texas, to Houston.

W. H. WHEELDON, superintendent of natural gasoline plants for Lone Star Gas Company in the West Texas division, has been transferred from Ranger to Dallas headquarters to become assistant general superintendent of plants. He succeeds Paul C. Coffin, who resigned to become general superintendent for Shamrock Oil & Gas Corporation, Amarillo. John M. Kindle, superintendent of Lone Star Gas Company's Trinidad, Texas, plant, relieves Wheeldon at Ranger.

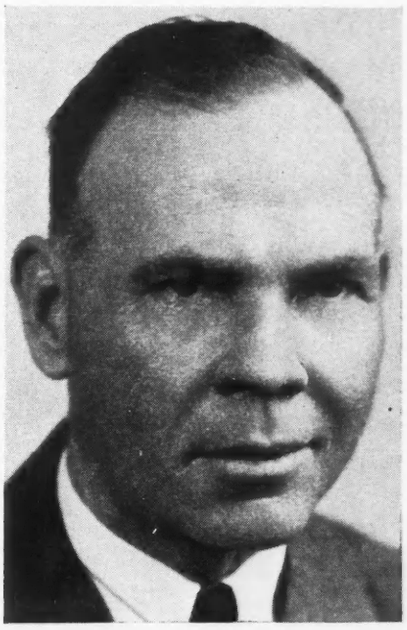
JOSEPH N. PEW, vice president of Sun Oil Company returned last week from a fishing vacation in Nova Scotia. He was accompanied by Governor Ralph James of Pennsylvania, and Carl E. Estes, Texas newspaper publisher.

A. J. CROWLEY, formerly of the University of Minnesota, has been named instructor in geology at the University of Wichita. He succeeds Prof. John Haff, who recently resigned to accept a position at the Colorado School of Mines.

JACK WOODWARD, West Texas district petroleum engineer for Magnolia Petroleum Company, has been transferred from Kermit to Mirando City to relieve Ed. Downing as Southwest Texas district engineer. Downing will succeed the former at Kermit.

JAMES R. BRITT has been made superintendent of Arkansas Fuel Oil Company's natural gasoline plant in the Shreveport, Louisiana, field. Britt has been with the company in East Texas.

WARREN MOORE, former attorney for the Federal Tender Board in Kilgore, Texas, has been transferred to Beaumont, Texas, to handle oil tax cases as assistant United States attorney for eastern Texas.



CLAUDE L. JETT

CLAUDE L. JETT, chief scout for Imperial Oil & Gas Products Company has been transferred from the Ark-La-Tex area to the Illinois Basin, and will make headquarters at Owensboro, Kentucky. Jett, connected with the oil industry for 26 years, is an active member of the Shreveport Oil Scouts Association and the National Oil Scouts Association of America.

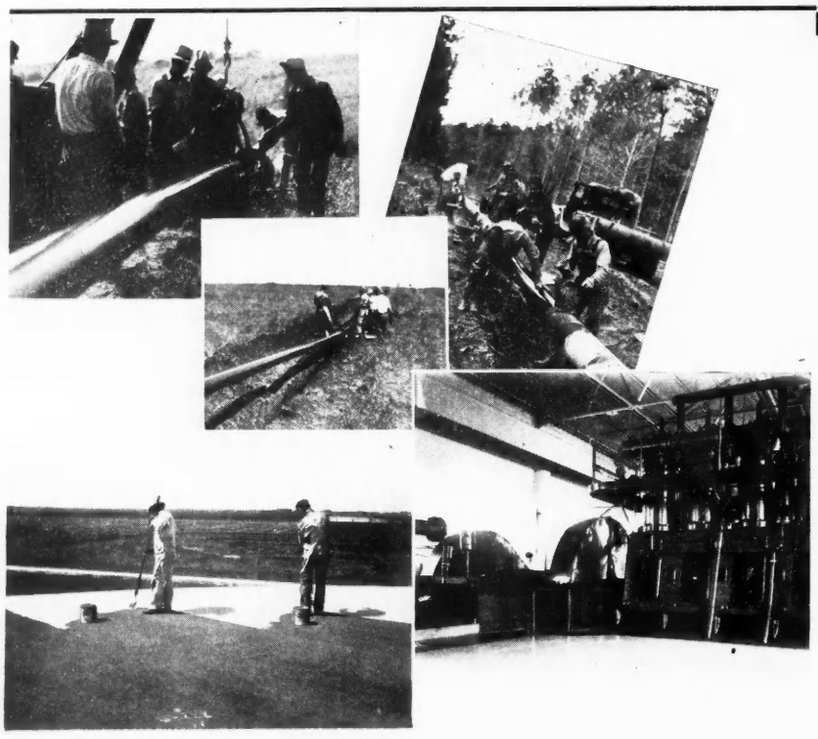
GEORGE ELLIOTT has been named reservoir engineer in the production department of Phillips Petroleum Company. He will maintain headquarters at Bartlesville, Oklahoma.

WALTER H. RITTERBUSH, head land man for the Kewanee Oil Company in Illinois with headquarters at Mattoon, spent the past week checking holdings of the company in Texas.

DIED:

GEORGE MILTON RICHARDSON, 51, Texas operator who was partial to wildcat projects, died August 14 of a heart attack in a hospital at Fort Worth, where he had resided since 1919. He was a native of Winslow, Arkansas, and was operating in Southwest Texas when stricken.

WALTER H. LOGAN, 61, receiver for Virginia Oil & Refining Company, died August 12 in a Fort Worth hospital following an appendectomy. He was appointed receiver for the defunct company in 1932 when the spread of the East Texas field embraced a number of paid up term leases previously acquired by the company.



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IN ACTUAL SERVICE, under practically every condition of soil and climate, Rust-Ban has demonstrated its ability to *protect pipe lines against corrosion.* A pipe line system, however, consists of more than just pipe — therefore the Rust-Ban line, which offers complete pipe line protection, includes protective coatings for booster station machinery, storage tanks and other pipe line equipment.

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THE WEEK'S NEWS SUMMARIZED

Shutdowns

Six states last week decided to stop their production of oil in retaliation against the drastic Mid-Continent crude price cut posted by some purchasers last week. This unprecedented retribution will cancel two-thirds of the United States' usual daily average production.

Texas initiated the shutdown holidays by ordering all its wells closed for 15 days. Oklahoma, Kansas, New Mexico, Arkansas and Louisiana decided to adopt the same procedure at a special meeting of the Interstate Oil Compact Commission held August 15.

It was indicated that the stopping of two-thirds of the nation's production would inflict several complications before the 15 days were up. Refiners generally planned to operate their plants as near capacity as possible, drawing upon crude stocks to supplant any available supply. Failing in this, gasoline stocks were expected to be called upon to meet consumptive demand. Some companies found themselves in a position whereby they probably could continue operating without difficulty, but others were not so fortunate.

Meanwhile, the situation was being watched closely by governmental officials interested in procuring a federal control law for the industry, and many within the industry feared the present crisis abetted their cause.

The shutdowns brought some immediate advancements in gasoline tank car quotations, some advancing from ⅛ to ½ cent a gallon. Service station prices had not advanced.

Early in the week additional purchasers of crude oil announced reductions in price, but after the storm of protest arose major buyers who had not revised their schedules maintained their old ones—perhaps deferring any action because no oil could be bought. However, there were some inditions that the old, higher prices might be restored. Sinclair Prairie Oil Marketing Company, leader of the Mid-Continent cut, discontinued all its postings, and Bell Oil & Gas Company went back to its previous schedule.

The selling of considerable oil under Humble Oil & Refining Company's posted price schedule was the reason given by the concern's president, H. C. Wiess, for the firm's cutting of crude oil prices. He declared that on the first of the month 218,000 barrels were moving under prices paid by the Humble in the territory in which it operates, and that with Sinclair Prairie's price reduction this was increased 150,000 barrels.

Charges of collusion to drive independents out of the business and similar claims flew wildly during the hotly debated controversies that followed the price cuts, and encouraged investigation of oil companies for possible anti-trust law violations. It was revealed that the Texas attorney general had investigators studying this situation for several months, and he promptly sent his men to Humble's headquarters in Houston.

The Texas Railroad Commission, meanwhile, advanced the date of its next statewide hearing from September 18 to August 28, and announced it would delve deeply into various phases of the current economic situation, including crude and gasoline stocks, and reasons for the recent price cuts.

Indications were that Illinois, whose rapidly mounting production, which has risen from 5000 barrels daily early in 1937 to over 300,000 barrels at present, would not benefit from the closing of production in other states. Illinois has no conservation laws and was not expected to joint the movement, but over-taxed pipe lines will not be able to move additional quantities of oil.

Louisiana Scandal

The expected return of indictments against several additional oil firms and Louisiana state officials failed to materialize last week. The grand jury was ordered to remain in session to report Monday, when John Rogge, assistant United States attorney general was expected back in New Orleans.

Rogge was in Dallas last week attending a hearing on Freeman W. Burford's fight to prevent removal to Louisiana on indicted hot oil charges. The indictment was returned on charges that production permits issued for Rodessa oil sale were granted without public hearing as prescribed by proration laws.

Several sensational disclosures were made at Burford's removal hearing, including the assertion by the head of the Louisiana conservation department's mineral divisions that the granting of special production permits were no exception, and that other concerns had benefited by them also.

Burford was ordered dismissed from custody at the conclusion of the hearing.

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Six States Close Production In

Unprecedented retribution will cancel two-thirds of nation's yield for 15 days

The rapidly changing panorama of oil, accelerated by the sudden and drastic fluctuation in the price of crude, moved along a wide front during the past week, as the many factions of the industry mustered their forces and grappled with a grave internal problem.

The 20-cent crude price cut in the Mid-Continent that was initiated August 10 by Sinclair Prairie Oil Marketing Company proved to be another shot at Sarajevo, having been followed by a momentary tenseness, a brief waiting to see what would happen next, and then a rapid succession of momentous developments, climaxed by the shutting down of two thirds of the crude oil production of the United States for a 15-day period.

Humble Oil & Refining Company dissipated the tenseness and precipitated open conflict by falling in line with Sinclair Prairie on the side of generally lower crude prices. For it was assumed that the Humble action would assure adoption of lower postings generally. And a great protest against a general cut immediately arose.

Concerned was the Texas Railroad Commission, which bears the responsibility of regulating production in the country's No. 1 oil producing state, and which apparently regarded the crude price cut as evidence of demoralized markets and waste.

Texas Starts Shutdowns

Deprecating the market developments, and acting quickly with the announced aim of restoring stability, the Texas Railroad Commission declared August 12 that it would order all fields of the state shut down for 30 days, and on August 14 it promulgated an official order, effective the next morning, calling for a 15-day closing.

Meanwhile, Colonel Ernest O. Thompson, one of the three members of the Texas commission, in his capacity as chairman of the Interstate Oil Compact Commission, had called a meeting of that body at Oklahoma City for August 15, aimed at securing the cooperation of other states in a general emergency shutdown program.

That meeting resulted in remarkable harmony and cooperation, representatives of other states having heartily endorsed the proposal. Consequently, 15-day shutdown orders were promulgated in rapid succession in five other Mid-Continent states, and by 6 p.m. Thursday wells were idle in Texas, Oklahoma, Kansas, New Mexico, Arkansas, and Louisiana.

Meanwhile, several major purchasers as well as independent refiners had adopted the new Sinclair Prairie and Humble prices or similar lower postings. Companies that made reductions included Cities Service Oil Company, Stanolind Oil & Gas Company, Tide Water Associated Oil Company, Shell Oil Company, Standard Oil Company of Louisiana, and others.

But on the other hand, some of the larger concerns, apparently awed by the cyclonic events of the week, and seeing no immediate significance of any price postings when no oil could be bought, deferred action on the price situation, leaving their postings unchanged at the old levels. In the no-action group were Magnolia Petroleum Company, The Texas Company, Gulf Oil Corporation, Carter Oil Company, and others.

The wide scope and contemplated duration of the shutdown program made it readily apparent that there could be only one immediate effect on the markets for both crude oil and refined products: a quick and pronounced strengthening of demand and a definite bolstering of prices. For a temporary oil shortage necessarily was in store, although the acuteness of the deficiency remained to be demonstrated.

Consequently, it was not surprising when gasoline tank car quotations were advanced from ⅛ to ½ cent a gallon within a few days after Texas led off in the well-closing.

Service station prices did not advance immediately, but it appeared quite likely that they might within a short time.

Refiners were obliged to make hurried plans for going through the 15 days without new supplies of crude; and some calculated that they could keep fires going by operating at subnormal, if not normal, rates; although others could see no way of avoiding plant shutdowns. Some of those without sufficient crude in reserve planned, consequently, to overhaul their plants during the oil famine.

Late last week curiosity increased as to whether or not the crude price reductions would be rescinded by any of the major purchasers. An independent refining concern, Bell Oil & Gas Company, of Tulsa, on August 17 announced an increase of 20 cents a barrel in its crude oil purchasing prices in the Red River bed area of North Texas and Oklahoma and in the Burkburnett field of North Texas, after having followed Sinclair Prairie August 10 with a 20-cent reduction.

The possibility of a general restoration of the old, higher postings appeared to be enhanced, moreover, when Sinclair Prairie Oil Marketing Company, leader of the Mid-Continent cut, announced late August 17 a discontinuance of all its postings in Texas, Oklahoma, Kansas, and New Mexico. Although no explanation was given, it was generally thought that the company might replace its August 10 schedule with higher prices upon resuming postings.

However, Humble Oil & Refining Company, which took the lead in extending the drastic crude cut throughout Texas and New Mexico, had not given indication late last week of any

Washington sees price cut as final federal control argument

A thorough investigation of the situation in the oil industry leading to the cutting of crude prices paid by refiners and the "production strike" initiated in Texas is expected in Washington to be undertaken by the Cole subcommittee when it convenes in October to study the proposed federal conservation act.

Original plans of the subcommittee, developed before its members scattered to their homes following the adjournment of Congress, called for a week of hearings in Washington in October, to be followed by a trip through Illinois and Louisiana and winding up with one week of hearings in the Southwest.

Although no members of the committee are in Washington, observers in the capital believe that the group will revise its program to permit an intensive study of the current situation, held in some quarters to be the final argument needed in behalf of federal control of production.

While, because recent developments were not then expected, the House, in authorizing the Cole committee to make its investigation, gave no instructions for a study of the recent price cuts, it is generally believed that the powers of the subcommittee are sufficiently broad to permit it to go into the matter without definite orders, since it was provided in the resolution that it should study all phases of the oil industry.

Discussing the situation at a press conference August 17, Secretary of the Interior Harold L. Ickes declared that the current crisis illustrates the need for the legislation provided for in the Cole bill for joint federal-state control of production.

That legislation, he said, would meet situations such as that now existing, through provisions giving the federal government jurisdiction over production when states fail to set up machinery to prevent waste.

The bill would "help the states in a case like this to limit production and keep up prices," he commented.

Retaliation For Crude Price Cut

Shutdowns offer threat of temporary oil shortage as refineries plan to operate

intention to forsake its new schedule. Officials of the company stoutly defended the Humble action, having declared that the reduction was necessary because of large under-market selling and buying of crude in Humble's market.

The Texas Railroad Commission, meanwhile, planned to look searchingly into the market situation. It moved the date of the next state-wide proration hearing up from September 18 to August 28, and announced that to this hearing it would invite or subpoena officials of the major companies, who could furnish information on the stocks of gasoline and crude oil held by those concerns. The information is sought, according to the commission, for guidance in the current situation and to permit planning for the fall and winter.

Under market selling caused Humble to cut

Having appeared before the Texas Railroad Commission at Austin August 16, in connection with his company's plea for a revision of its East Texas field allowables, H. C. Wiess, president

[*Continued on page 61*]

IT was indicated late last week, after six Mid-Continent states had ordered 15-day shutdowns of their oil fields, that the closings might not run the full course prescribed without leading to serious complications in the functioning of the industry.

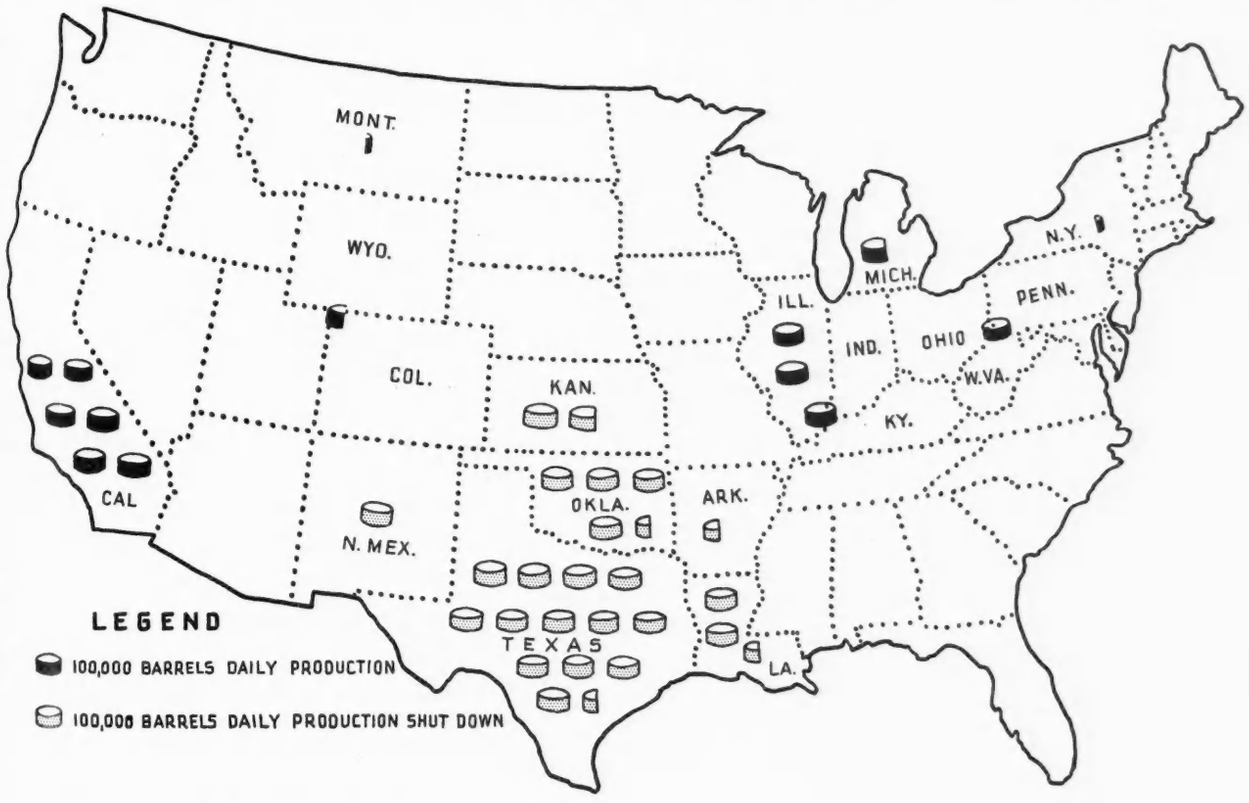
The six states, including Texas, Oklahoma, Kansas, Louisiana, Arkansas, and New Mexico, have been producing almost exactly two-thirds of all crude oil turned out in the United States. In other words, they have been supplying the refineries the raw material for about two-thirds of the gasoline and other petroleum products consumed in the country.

Consequently, the oil field closings left only one-third of the normal stream of new crude oil to the country's widely scattered refining facilities; and with consumption of products uninterrupted, demand could be met only by maintaining refinery runs as near normal as possible by drawing on crude stocks and augmenting the current plant output with withdrawals of refined products from storage.

It appeared that generally, plant runs would be upheld as near normal as

Two Thirds of United States Crude Oil Production Shut Down

Closing in of wells in Texas, New Mexico, Oklahoma, Kansas, Arkansas, and Louisiana by state officials has left production only in states that have been furnishing approximately one third of the total output of the nation.



Where the Country's Refineries Are Located

Each symbol represents approximately 20,000,000 barrels of finished gasoline produced annually.

crude storage conditions would permit, consequently gasoline stocks were not expected to come down in proportion to the cut in store for crude storage, although the former would undoubtedly be more beneficial to the industry.

Storage Widely Distributed

Only about one-fourth of the crude oil in storage in the United States is at the refineries, the bulk of the remaining three-fourths representing pipe line and tank farm stocks, although a relatively small proportion is located on producing leases.

Consequently, even a brief shutting off of the normal supply of crude at refineries would soon force a falling back on crude storage on the tank farms, a large part of which is held by the larger companies, although some of the major concerns have little or no surplus crude, either at refineries or on tank farms, in excess of normal working stocks.

It was indicated, therefore, that some of the larger companies with substantial crude storage, would be best able to go through the shutdown period; and that numerous independent refiners, without material stocks of crude, would be forced early to close down plants, although some of the larger companies also were not in position to go long on a normal basis of refinery operations.

The shutdowns naturally led immediately to a pronounced strengthening of demand for gasoline, and within a few days, quoted refinery prices in the Mid-Continent advanced ⅛ to ¼ cent a gallon. The increases occurred first in the lower octane grades and in areas where sales had been made under the published quotations. Furthermore, relatively little gasoline was being offered at any price, as many independent refiners were obliged to worry over their ability to fulfill contracts on previously sold quantities.

It was expected, nevertheless, that higher prices for gasoline would not develop at service stations immediately.

At Port Arthur on the Texas Gulf Coast it was reported that The Texas Company might be forced before the end of the shutdown to close its large refinery there, as the plant did not have enough crude in reserve to operate 15 days, while it was considered doubtful if the company had enough oil in tank farms in the state to keep the refinery supplied.

The Texas Company meanwhile had begun moving West Texas-New Mexico sour oil by barge from Houston to Port Arthur, as a large portion of its crude stocks are on the Texas-New Mexico Pipe Line Company system. Because of the oil being sour, the company preferred to use barges rather than route the oil through Gulf Coast connecting lines of The Texas Pipe Line Company.

Gulf Oil Corporation was believed to be in relatively good circumstances for weathering a protracted shutdown, as it had a fairly large quantity in tankage in Inland Texas, although the company was expected to have trouble in supplying plants in the Middle West. The company operates plants at Fort Worth and Sweetwater, Texas, as well as at Port Arthur. It was understood that the company would be able to continue refinery operations for about 10 days on its available crude supply.

Atlantic Refining Company was said to be in position to continue operations, although at sub-normal rates, unless the shutdown were extended beyond 15 days.

Magnolia Petroleum Company faced the shutdowns with ample crude stocks in the Southwest to continue normal refinery throughput for the 15-day period.

Sinclair Refining Company was not in comfortable circumstances regarding crude stocks, although it expected to keep Fort Worth, Houston, and other refineries on stream. The North Texas plant was secure with about a million barrels of stocks, mostly Panhandle crude, in reserve.

It was doubted if Humble Oil & Refining Company could satisfactorily ride through many days, unless relieved of normally large deliveries to Standard Oil Company of New Jersey.

It was believed that Shell Oil Company would be in a tight spot within a few days because of the shutdowns.

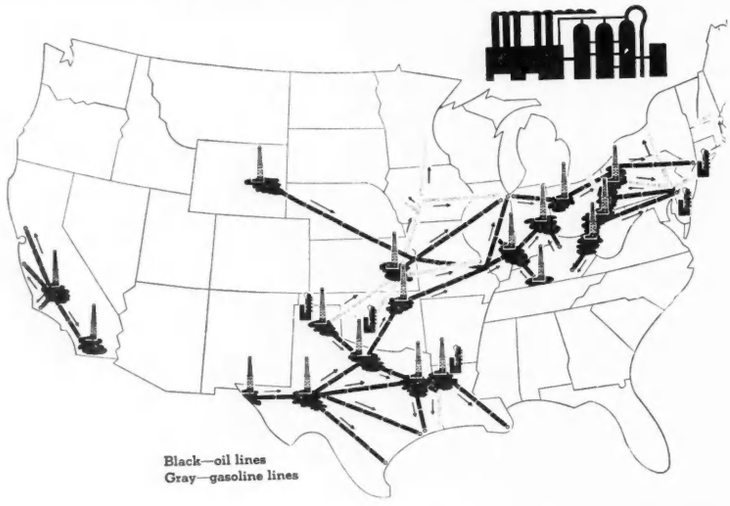
Pan-American's large plant at Texas City was expected to be one of the first to pull fires, as it was doubted if Stanolind would permit the refinery to draw on stocks at Mexia, Texas.

Shutdowns Observed

In the oil fields, early reports indicated that the shutdowns were being observed generally. The closings apparently had the approval of a great majority of producers, although a few protests arose, while several operators threatened to go into the courts and seek injunctions against enforcement of the state orders.

Such suits were to be based, appar-

Directional Flow Map of Crude Oil and Gasoline Pipe Lines



ently, on arguments that the state officials went beyond their powers and authority, under the laws. The laws generally limit the responsibility and power of the conservation agencies to conservation of oil and gas and prevention of waste; and it was protested by those opposed to the closings that the 15-day shutdowns were based on the desire to force the crude prices upward, following the general reductions of August 10 and 11.

Whether or not crude prices actually would be raised back remained to be seen, although it was obvious that the closings would tend to strengthen the markets at least temporarily. It was believed, further, that the markets necessarily would continue firm in September if the prorated states, accounting for almost 90 percent of United States production, would order strict allowables for that month.

Nevertheless, some doubts were expressed as to the ability of the shutdowns to bring about any lasting stability of the markets. It was contended, in that connection, that the closings did not eliminate the fundamental difficulty of under-market selling of crude in unprorated Illinois, where production has mounted to approximately 300,000 barrels daily without having yet reached its peak.

In the clamor that attended the inauguration of the Mid-Continent shutdowns, much was said about the probable effect of the unprecedented move on the federal control question. It was contended variously that the closings would invite federal control of the industry or prove that federal control was not needed.

From Washington, meanwhile, the situation was observed with keen interest. The federal government, under the Connally Act, has the responsibility of aiding the states in the enforcement of their oil conservation orders and regulations, by preventing interstate movement of oil produced in violation of the orders. It was stated that the government could set up additional federal tender boards if necessary to enforce the laws. The federal government also has sanctioned the Interstate Oil Compact, and the administration could call on the compact commission to take further action if believed advisable. It was pointed out also that if the situation became sufficiently grave to warrant such action, President Roosevelt could call a special session of Congress to enact legislation for strict federal control of petroleum resources in the "interest of the general welfare."

Humble supplying crude to small West Texas plants

Three refineries in West Central Texas have arranged for the purchase and delivery of spot quantities of Texas Panhandle crude to be furnished by Humble Oil & Refining Company at the latter's reduced price posting. Moutray Refining Company and Onyx Refining Company, operating plants near Hawley, have been granted an initial delivery of 2500 barrels each. Baird Refining Company, which has been supplying Humble Oil & Refining Company with gasoline from its Baird refinery, was allotted 7000 barrels. The oil was held in storage prior to the statewide shutdown order.

States Close Production

(Continued from Page 59)

of Humble Oil & Refining Company, was questioned concerning Humble's reductions of crude price postings as of August 11.

In reply to attacks against the company for the price cut, Wiess issued a prepared statement, which was essentially the same as that he had given out to the press at Oklahoma City August 15, when the Interstate Oil Compact Commission met there to contemplate the emergency shutdowns of oil fields. The Wiess statement was as follows:

"Being a producer of large quantities of crude oil, and feeling the responsibility resting upon it as one of the major purchasers of crude oil in the states of Texas and New Mexico, the Humble company was very reluctant to reduce its prices for crude oil on the eleventh. This reduction in prices was made necessary primarily by the fact that large quantities of crude oil were selling in its markets at prices substantially below Humble's postings for similar grades of crude.

"As of August 1, 218,920 barrels of crude oil was moving daily in Texas and Louisiana markets and approximately 200,000 barrels daily in Illinois and Indiana below Humble's prices; and in addition to this, recent crude cuts were made by other purchasing companies affecting an additional 150,000 barrels daily, making a total in excess of 550,000 barrels of oil per day which was selling at prices substantially below Humble's posted prices.

"For a number of months the company had hoped that these conditions would improve, but on the contrary, they grew steadily worse and we saw no immediate hope for improvement. We have lost business as a direct result of lower prices being paid by others.

"In view of such conditions, the Humble company could not afford to continue to pay prices which were out of line with prices paid by its competitors. It is earnestly to be hoped that conditions may soon be so stabilized that an increase in posted prices can be justified."

"No one," Wiess told the commission, "can be more reluctant than Humble to cut the price of oil, but I accept the full responsibility for what was done, and I want to correct the impression that it was dictated by Wall Street.

"We know that as a large producer and purchaser of oil there is a trust imposed on us as to oil prices and we have attempted to interpret crude prices fairly.

"On August 1, there were 218,900 barrels of oil selling in Texas, Louisiana and Arkansas below Humble. This has been going on for 10 months. Humble has been maintaining prices higher, but the oil selling below Humble has now reached an amount equal to 10 percent of our production. Last week another purchaser (Sinclair, but not named by Wiess) purchasing 90,000 barrels in Texas, reduced the price of oil. This purchaser is also buying 50,000 to 60,000 barrels of Oklahoma crude. In Illinois, 300,000 barrels are going to market at a price under Humble. We are, after all, merchants, buying 80,000,000 barrels a year, and we are obliged to sell our oil to get money to pay for it."

Wiess said that of the oil selling under the market 81,900 barrels comes from South Louisiana, 39,300 comes from North Louisiana and Arkansas, while there was 97,650 barrels in Texas.

"I commend any legal effort to correct the situation," he declared. "I think prices are too low, but we can't continue to pay more for oil than others are paying."

"What should the price be?" inquired Commission Chairman Lon Smith.

Wiess said he did not know, but he volunteered his services to help the commission any way he could.

Industry upset

[*Continued from page 16*]

crude oil 18.5 times the wholesale refinery price of a gallon of gasoline. Thus the dollar-crude would have justified 5⅜-cent gasoline at the refinery, although the actual price of gasoline in late 1933 was only around 5 cents.

Before the recent crude price cut, the average price of crude was about 98 cents a barrel, and the average Mid-Continent refinery price of regular-grade gasoline was aproximately 4⅞ cents a gallon. Therefore, the relationship that prevailed prior to the recent crude cut was approximately the same as that which prevailed after the NRA code became effective.

Following the recent crude cut, the average price of crude is down to about 80 cents, whereas application of the code relationship quota to the present 4⅞-cent gasoline price would indicate a crude price of 90 cents.

Compactors agree on shutdowns in two hours

Plans for the emergency shutdowns of Mid-Continent oil fields were made in only two hours of deliberation by the Interstate Oil Compact Commission in its special meeting at Oklahoma City August 15.

Following the brief deliberation, Ernest O. Thompson, of the Texas Railroad Commission, chairman, called for representatives of the press and read a statement to the effect that the compact commission has no authority over oil conservation within a member state and that each state would act independently as its contribution toward solution of an emergency.

First announcement was from Governor Leon C. Phillips of Oklahoma, who said:

"The Corporation Commission of Oklahoma is ordering a 15-day complete shutdowns of all wells to see if we can not take care of our own interests and preserve our resources." There was a round of applause and he

added that the order would be effective at 7 o'clock the following morning.

The last previous shutdown of an Oklahoma oil field came in 1931 by executive order of Governor W. H. Murray, who fixed a military zone around wells in the Oklahoma City and the Seminole area fields. This continued for 91 days.

Response for Kansas came from Andrew J. Schoeppel, chairman of its corporation commission, with:

"I'm just one member of the Kansas Corporation Commission and the other two members are in Kansas but at an early hour tomorrow we will issue an order to shut in every well in the state for 15 days."

For Arkansas, which is not a member of the compact, C. O. Bailey, chairman of its conservation commission, said:

"As soon as I get home I'll confer with my associates and see what can be done to back up Texas, Oklahoma and Kansas in this fight to preserve the oil industry."

The statement for New Mexico, a compact member, was made by A. Andreas, state geologist.

"Within 24 hours after I get home our conservation commission will take similar action."

Illinois, a member of the compact but without official representation, had an observer, Guy E. McGaughey, who reported:

"You may be assured we will consider your problems sympathetically."

A telegram was read from Earl K. Long, Louisiana governor, whose state is not a member, in which the recent cut of 20,000 barrels per day was cited and this assurance added:

"We are willing to make another reasonable cut and do what we can to help."

Michigan, newest member of the compact, was represented by P. G. Hoffmaster, director of conservation, who said that body would take "immediate action necessary to meet the situation."

Colorado was represented by W. H. McFadden, Southland Royalty Company, but no statement was given as to action by the state, which has less than 2 percent of the national output.

A calculation made during the compact meeting was that states with 77.44 percent of the production of the United States were represented.

Statement Issued

The statement issued after the executive meeting of the compact commission was:

"The sovereign producing states are capable of handling their own conservation problems. We firmly believe that they will promptly and properly control the production of oil within their own states. We feel that it will be done with certainty and in a manner that will get results.

"Each state will handle its own particular problem in its own particular way, subject only to the laws of that particular sovereign state.

"We reiterate that state sovereignty should not and will not permit encroachment upon its exclusive police power.

"Article 6 of the Interstate Oil Compact provides in part—'the duty of which said commission shall be to make inquiry and ascertain from time to time such methods, practices, circumstances and conditions as may be disclosed for bringing about conservation and prevention of physical waste of oil and gas and at such intervals as said commission deems beneficial it shall report its findings and recommendations to the several states for adoption or rejection.

"'The commission shall have power to recommend the coordination of the exercise of the police powers of the several states within their several jurisdictions to promote the maximum ultimate recovery from the petroleum reserves of the said states and to recommend measures for the maximum ultimate recovery of oil and gas.'

"Under the authority granted us by the legislatures of our states and under the consent of the congress, we have exchanged our experiences and have thoroughly discussed ways and means of conserving oil and gas in our own respective states and each state will take such action as it sees fit and each state will make its own announcement."

Anti-trust investigation is started in Texas

Investigations of oil companies for possible anti-trust law violations were encouraged by the developments of the past week.

Jerry Sadler, member of the Texas Railroad Commission, sent to W. S. Farish, president of the Standard Oil Company of New Jersey, a telegram requesting that the company support a price raise and suggesting that it might do so by advising its subsidiary, Humble Oil & Refining Company. To this telegram, Farish sent Sadler the following reply:

"Upon returning to my office this morning I find your wire of August 13th with reference to the lower crude oil prices posted last Friday by Humble Oil & Refining Company. Standard Oil Company of New Jersey does not operate in Texas and has never attempted to exercise any control or direction of policy of Humble Oil & Refining Company. The recent action by Humble in reducing crude oil prices was initiated by it and was based on its own judgment uninfluenced by Standard Oil Company of New Jersey. Upon posting new prices Humble advised us that it estimated more than a half million barrels of crude oil were moving to market daily in competition with Humble's purchases at prices below a parity with Humble's own posted prices. Under the circumstances I am taking the liberty of sending a copy of your wire and this reply to Humble Oil & Refining Company."

Sadler Points to Humble

The receipt of this telegram resulted in the disclosure by Sadler of a 15-year oil-purchase contract between Humble and Standard of New Jersey, which Sadler indicated showed that prices fixed by the Humble Company were in some measure controlled by the New York group.

He pointed to profits of 36 million dollars reported last year by Humble as evidence of the fact that the Company was prosperous. At the same time, he announced he was requesting Attorney General Gerald Mann to file suit for alleged anti-trust violation.

"I hand you herewith photostatic copy of a contract entered into on July 1, 1934, operative for a period of 15 years, between the Standard Oil Company of New Jersey and the Humble Oil & Refining Company of Texas.

"I most respectfully request your investigation of this contract to determine if the anti-trust laws of this state have been violated or if the Standard is seeking to operate in this State by subterfuge. In either case I implore your early action in the matter, to the end that the laws of this state shall be respected and that officially we shall not wink or ignore rank violations.

"It is, of course, an open secret that the Humble is a subsidiary of the Standard Oil Company of New Jersey, and it occurs to me that the enclosed document is proof of that fact."

Attorney General Mann revealed that for two months he had maintained investigators who were looking into possible anti-trust law violations by Texas oil companies. He carefully avoided, however, mentioning the name of any particular company.

On the second day following Sadler's request came another surprise. Attorney General Gerald Mann confirmed reports that he had sent to the central office of the Humble Company in Houston eight assistant attorneys general and accountants to look into the company's affairs. He declined to be more specific, but the close connection between the letter from Sadler and the announcement by Mann led many observers to believe that anti-trust violations were the object.

Texas will get storage data at meeting called August 28

The Texas Railroad Commission has scheduled a state-wide proration hearing to be held in Austin on August 28. The hearing, originally set for September 18, has been tentatively abandoned.

Commissioner Ernest O. Thompson announced that oil company executives would be invited to appear as they did last December for the purpose of furnishing statistical information and supplying explanation of the policies of their companies. To determine how much oil a company has that is immediately available, the following questionnaire has been prepared:

What are the proper economic levels of gasoline stocks and crude stocks above ground on October 1, 1939, January 1, 1940, and April 1, 1940?

Do these figures include the oil that goes to fill pipe lines and tank bottoms?

What are the present stocks of crude oil and gasoline? How much of each are needed to fill pipe lines, fill tankers en route, and how much of it is tank bottoms and water?

"In my opinion," Thompson said, "there is not anywhere near as much crude oil available for actual transportation as major companies have been pretending. We are going to find out how much oil storage is in the country and where it is. Probably there is no more than 200,000,000 barrels, instead of the 287,000,000 barrels claimed."

It is probable that the testimony adduced at this hearing will determine whether the commission will continue

its state-wide oil shutdown policy for a longer period. It is known that commission officials are contemplating such an extension unless the crude price responds to the shutdown order within the current 15-day period.

At the hearing last December, the president or one of the principal executives of virtually every major company was in attendance and answered questions from the witness stand. These questions were propounded by every class of operator and did much to clear the atmosphere, especially in regard to purchasing and production policies of the major concerns.

Undoubtedly the commission will seek to determine why Sinclair cut the price, why Humble followed, why Shell ordered a reduction after the shutdown program had been announced. With company executives on the witness stand under oath to answer these questions, the hearing will undoubtedly draw a large attendance.

Texas Commission swamped with exemption requests

Because the Texas Railroad Commission was swamped with requests for exceptions to its statewide shutdown order, some of which were granted and some of which were denied, it was impossible last week to determine the amount of oil which may be produced under the exceptions granted. Commission executives were in constant conference with oil company representatives who swarmed into Austin seeking relief.

As a general principle, only those wells making large volumes of water and those supplying gas to outlying districts were exempt from the order.

The commission, however, sent the following notice to all deputy supervisors:

"All oil produced during the 15-day shutdown from wells exempted from this shutdown is to be charged back against allowables."

Commissioner Thompson also wired other oil producing states:

"In order that any rumors to the contrary may be promptly stopped I wish to state to you that it is the intention and order of the Railroad Commission of Texas to exempt from the oil shutdown order only those wells that have such a high water production with the oil that to shut them in completely would kill the well and cause waste.

"Also, only those wells from which natural gas is being produced with the oil and where the natural gas from these particular wells is being furnished for cooking and domestic use where no other source of gas is easily available.

"The reason for this telegram is that rumors have reached us from other states that representations were being made to the effect that Texas was letting wells other than these operate."

It seemed doubtful that anything like a true picture of the amount of oil produced during the shutdown could be procured before reports from the producing companies are actually filed. These will not be due for August before September 15.

Although Col. Ernest O. Thompson of the Texas Railroad Commission had advocated a 30-day shutdown, this plan was opposed by his colleagues, who urged that 15 days would be long enough for the initial order. Whether an extension would be ordered at the end of the 15-day period depended apparently on the results obtained during the first two weeks.

The shutdown was instituted Tuesday morning, August 15, and, so far as the railroad commission could determine through its agencies, it was being obeyed generally. No suits had been filed, and J. S. Bridwell of Wichita Falls, who had declared publicly he would fight the order, issued another statement saying "he would go along with the majority."

Shutdowns may promote control for Illinois

The crisis facing the oil industry, precipitated at least in part by conditions in Illinois, may serve to bring about a degree of production control in that wide-open state. Governor Henry Horner already has committed himself to a special session of the legislature to amend the state's pension law, and it is not unlikely that he will broaden his call to permit consideration of production control legislation in view of developments of the past 10 days.

The governor is in sympathy with the principle of controlled production to conserve the state's oil resources, and a year ago put a program patterned after conservation statutes of southwestern states before a special session of the legislature. It was rejected, and with the governor in Florida because of illness during the greater part of the recent regular legislative session, the administration made no effort to push this program early this year.

The argument that played an important part in defeat of conservation measures when advanced before a special session a year ago was that no production control should be instituted until the state's production of crude oil equalled its consumption of refined products. Discussing this subject, Dr. M. M. Leighton, chief of the state geological survey, said:

"Only a short time ago the state's industrial leaders were hoping that Illinois could produce enough oil to make it self-sufficient. Consumption in the state is estimated around 60,000,000 barrels a year. Meanwhile, the state's output has risen steadily until it seems likely it will top 80,000,000 barrels this year. At the present daily rate for a whole year, production would exceed 100,000,000 barrels. In addition to the great quantities of oil being found in Illinois now, there are strong potential possibilities of new stores of oil in the St. Peter sandstone, which is deeper than the strata now being explored, and corresponds to the Wilcox sand, Oklahoma's large producing formation."

With transportation facilities overtaxed, Illinois is not in a position to profit by shut-downs in southwestern states. Pipe line proration has been in effect in many areas for over a year, and it could not be lifted materially to meet a demand for more Illinois crude that may result in view of the action taken by leading producing states last week.

"That the situation facing the oil industry of the country, as well as the state of Illinois, is most serious is generally admitted," said G. H. Blankenship, Centralia, vice president of the Independent Oil Producers of Illinois. "Some observers say it is the most serious since the days of the East Texas boom, in 1933, when oil went to 10 cents a barrel. It comes as no surprise to us. Our organization has been on record for more than six months as favoring reasonable and necessary oil regulation in this state in order that such a condition as now exists might be avoided or, at least, its worst effects minimized."

Small well owners oppose shutdowns

Dissatisfaction at the end of last week was evident among stripper well owners in Texas, Oklahoma and Kansas over the shutdown of all production. Threats of injunctions were frequent but no petitions were filed up to the end.

New report shows increase in imports

Charges of independent producers that the current controversy in the oil industry was engendered in part by heavily increased imports by the major companies were given confirmation by the Department of Commerce August 18 in a report showing that imports of crude and principal refined oils during the first six months of this year were nearly 15 percent above those of the corresponding 1938 period.

Total imports for the period were 30,097,000 barrels, the department reported, with increased receipts of crude being mainly responsible for the gain.

Total imports of crude increased 3,844,000 barrels over 1938 to 16,288,000 barrels during the first half of 1939, it was announced. Entries for immediate consumption were higher by 2,418,000 barrels, due to heavier shipments from Venezuela and Colombia received in the customs districts of New York and Massachusetts, while imports from Mexico at Galveston for refining in bond at Houston increased from nothing to 1,406,000 barrels.

Aside from an entry in March of 313,000 barrels from Mexico into bond at New Orleans, gasoline imports were negligible, but receipts of naphtha (not motor fuel) and finished light products, though small, increased from nothing to 20,000 barrels. Although there was little change in receipts of gas-oil and distillate fuel oil for immediate consumption, entries from The Netherlands West Indies for refining in bond at New Orleans increased from nothing to 407,000 barrels.

Because of reclassification, no comparisons were possible for fuel oil, topped crude and unfinished distillates, the department stated. Of the remaining petroleum products imported for immediate consumption, receipts of lubricating oils, always unimportant, were smaller; paraffin wax imports fell from 18,537,000 to 15,756,000 pounds; and natural asphaltum and bitumen increased from 9360 to 46,504 long tons, although, it was said, it is probable that the latter figure includes 26,490 tons shown as originating in The Neth-

erlands West Indies which was actually petroleum asphalt.

Entries of crude for domestic consumption during the first half of 1939 totaled 13,363,888 barrels against 10,945,802 barrels in the corresponding period last year, and entries into bonded manufacturing warehouses for manufacture and export were 2,909,555 barrels against 1,498,048 barrels, the department's report showed. There were also 3894 barrels withdrawn from bond for consumption and 15,050 put into bonded warehouses, against none last year.

Of the entries for consumption, 12,057,383 barrels were from Venezuela, 1,166,439 barrels from Colombia and, with the exception of 40 barrels from Iraq, the remainder was from Mexico. All the crude into bonded manufacturing warehouses was from Venezuela.

Only flowing wells in Louisiana closed

A total of 868 wells of the 3352 wells in North Louisiana are affected by the shutdown order that went into effect in Louisiana August 17 for a 12-day period on instructions of Governor Earl K. Long. Only the Rodessa, Cotton Valley, Lisbon and Shreveport oil fields were affected, as pumping wells, strippers, and some gas-condensate wells were exempted from the order as promulgated. The total daily allowable of prorated fields in North Louisiana is approximately 62,000 barrels of which all but 15,000 barrels daily is in prorated fields.

There are 245 wells in Lisbon; 48 in Shreveport; 468 in Rodessa (Louisiana side); 17 lower Marine oil wells at Cotton Valley; and 40 Holloway (Travis Peak) oil wells at Cotton Valley.

Oklahoma wells closed under emergency order

Application for the emergency order of the Oklahoma Corporation Commission, whereby output of 55,000 oil wells was halted for 15 days, was made by Mac Q. Williamson, attorney general, and Earl Foster, attorney for the commission, as well as W. J. Armstrong, conservation officer.

Among the findings upon which the order is based the following two paragraphs are departures from orders of proration:

"That the Governor of the State of Oklahoma, after a thorough and exhaustive investigation of the conditions in the production of oil, has requested that an order be issued closing down all oil wells in the state of Oklahoma for a period of 15 days in order that waste be prevented, correlative rights be protected and ratable taking effected.

"That owing to the facts, circumstances and conditions hereinabove set out, the commission finds that there does exist an emergency in the production of oil in the state of Oklahoma by reason of which it is necessary to issue a temporary emergency order closing down each and every well in every common source of supply in the state of Oklahoma for at least a period of 15 days, to be effective as of August 16, 1939, at 7 o'clock a.m."

Arkansas closes but 243 of its wells

The Arkansas Oil and Gas Commission's shutdown order put in effect last week, and resisted by Lion Oil Refining Company on its 59 producing Jones sand (lower Marine) wells at Schuler, affected a total of 243 wells in the regulated (prorated) fields of Arkansas.

Number of wells in the prorated fields shut down are: Village, 7; Buckner, 14; Atlanta, 3; Magnolia, 54; Schuler, 165. The Schuler wells are divided among the following horizons: Morgan sand (Travis Peak), 11; Jones sand (lower Marine), 138, and Reynolds (Permian) lime, 16.

There is a total of 2872 oil wells in Arkansas with a combined daily average on August 16, the day before the shutdown, of 64,781 barrels. The Arkansas Oil and Gas Commission estimated that 28,945 barrels daily yield comes from stripper wells that were exempted from the shutdown. The stripper wells in the state total 2629 wells.

Fifteen men were dispatched to the Schuler field Thursday, August 17, by the Arkansas Oil and Gas Commission to shut down Lion Oil Refining Company's 59 wells there after that company had defied the shutdown order and had gone ahead August 17 operating as usual. The shutdown had been put in effect as of 7 a.m. August 17.

Col. T. H. Barton, president of Lion Oil Refining Company, had branded the shutdown order as "unreasonable, capricious, and confiscatory" and said his company was "compelled" to refuse to comply with it insofar as the company's Jones sand wells at Schuler were concerned. He said the company would seek a court injunction to prevent enforcement of the order.

Market Situation

Production shutdowns bring immediate strength to gasoline market, as only small quantity is available . . . Statistics will reflect closing

The markets naturally will be highly unsettled and artificial until after the lifting of the oil field shutdowns throughout the Mid-Continent.

Both crude and refined oils are, of course, in unusually strong demand, temporarily, as many refiners will have extreme difficulty in going through the 15-day shutdown period without running short of crude.

Consequently, crude in reserve is being carefully conserved, and in many cases, refinery runs have been scaled down so that operations can be maintained during the full period of the closings.

Meanwhile, numerous refiners in the Mid-Continent have withdrawn quotations on gasoline and on some other products, being unable to offer any material in excess of what they need for fulfilling contracts.

Because of the shutdowns, production of natural gasoline has been drastically reduced, and prices of that commodity have shut upward. Within a few days the quoted price was advanced from 3 to 3¾ cents a gallon in the Mid-Continent.

Although many refiners had ceased to offer gasoline on the open market, some quotations were available late last week, and they were in some instances one-eighth of a cent a gallon higher than before the shutdowns were inaugurated.

Quotations on most other products were generally unchanged.

Crude Oil Markets

The crude oil markets, meanwhile, appeared to be gaining strength, also; and there were some indications that the recent reductions might be generally rescinded.

Sinclair Prairie Oil Marketing Company, first major purchaser to reduce crude prices, withdrew its postings August 18 with the announcement that it would "until further notice discontinue posting the price that it would pay for crude oil in the states of Texas, Oklahoma, New Mexico, and Kansas." That left the concern free to pay whatever terms were agreed upon in any transactions.

Bell Oil & Gas Company, a buyer in the Burkburnett and Red River bed areas of North Texas, raised its price August 18 back to a top of $1.03 per barrel for 40 gravity and above. Crude of similar grade on Humble Oil & Refining Company's August 11 schedule was listed at 80 cents a barrel.

Danciger Oil Refineries, Inc., raised its posting for sweet crude in the Texas Panhandle back to 96 cents a barrel for the top grade, restoring the former generally paid price.

Early last week several purchasers in the Mid-Continent had adopted the lower price schedules of Sinclair Prairie and Humble. Reductions were extended to some fields that had not previously been affected when Shell Oil Company issued postings in Texas, New Mexico, and Louisiana in line with those of Sinclair and Humble, and when Standard Oil Company of Louisiana published a new schedule for North Louisiana and Arkansas.

Stanolind Oil Purchasing Company effective August 12 met the reduced postings of Humble Oil in East Texas and on the Texas Gulf Coast.

Atlantic Refining Company met the Humble prices in Texas and New Mexico fields, effective August 11.

Tide Water Associated Oil Company reduced prices for Conroe and East Texas, effective August 11.

Kanotex Refining Company lowered its Oklahoma-Kansas prices 20 cents a barrel, effective August 12.

Panhandle Refining Company, effective August 11, reduced its postings in

West Central Texas to conform with the new Humble schedule.

DeSoto Crude Oil Purchasing Corporation lowered its East Texas posting for East Texas crude to 90 cents a barrel, the new lower general price, effective August 11.

Skelly Oil Company effective August 11 cut its purchasing prices for Kansas crudes 20 cents a barrel.

Illinois Price Cut

Sohio Corporation, subsidiary of Standard Oil Company of Ohio, reduced its crude posting in the Salem field only in Illinois 20 cents a barrel, effective August 16, making the new price 85 cents.

Standard Oil Company of Louisiana, effective August 14, reduced its posted prices for Louisiana and Arkansas crudes 13 to 23 cents a barrel.

Up to August 17 only a part of the other purchasing companies had met the schedule of reduced prices of 20 cents per barrel initiated in Louisiana and Arkansas by Standard Oil Company of Louisiana August 14. Arkansas Fuel Oil Company (Cities Service) was the first to meet the new schedule. Root Petroleum Company and Lion Oil Refining Company, two of the principal purchasers at Schuler, Arkansas, met the Standard of Louisiana's new gravity scale schedule of prices in that field; and Caddo Crude Oil Purchasing Company (M. J. Grogan) met the new gravity scale and cut Shreveport, Louisiana, crude 10 cents, making the top price 85 cents for 40 gravity and above. H. H. Cross Refining Company met the new schedule for Smackover, Arkansas, crude, which had been reduced to 60 cents.

Like the Standard, Arkansas reduced its posting 20 cents per barrel in North Louisiana field where it is a purchaser, lowering the top price to 85 cents per barrel. In Arkansas, the company posted a price of 75 cents for crude from Magnolia, a cut of 9 cents, and a flat price of 60 cents for Smackover crude. That was a cut of 13 cents.

Gasoline prices move upward in shutdowns

Wholesale prices of gasoline and some other refined products immediately were strengthened after the 15-day shutdowns of Mid-Continent oil fields got under way.

Actually, very little material was being offered in the open market, as plant owners were concerned primarily with fulfilling contracts. But such quotations as were made were in some cases higher than before the closings.

Natural gasoline was in exceptionally strong demand, and prices advanced ¾ cent a gallon within a few days, in a series of three ¼-cent increases.

Refined Gasoline

U. S. motor gasoline at Oklahoma refineries ranged last week about as follows: 62 octane and below, 4¼ to 4⅝ cents a gallon; 63 to 66 octane, 4½ to 5 cents; 67 to 69 octane, 4⅝ to 5⅛ cents; 70 to 72 octane, 5 to 5½ cents.

Corresponding prices in the Chicago market were: 3¾ to 4½ cents, 4 to 4½ cents, 4¼ to 4⅞ cents, and 4½ to 5¼ cents.

In East Texas no gasoline was being offered in the open market, because of the oil field shutdowns. Prior to the closings, 60-62, 400 end point gasoline was priced generally at 4¼ cents a gallon.

Following three successive ¼-cent advances within a week, natural gasoline, grade 26-70, was selling in the Mid-Continent markets, f.o.b. refineries at 3¾ cents a gallon, and sales were reported at the same price, f.o.b. Breckenridge, Texas.

Kerosene Prices

Kerosene prices f.o.b. Oklahoma refineries ranged from 3⅝ to 4¼ cents a gallon for the 41-43 water white grade, and from 3¾ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3 to 4 cents and 3¼ to 4¼ cents.

In the Chicago market range oil was priced from 3 to 3⅞ cents a gallon. The No. 1 white oil was priced from 3 to 3¾ cents, and No. 1 straw from 2¾ to 3⅜ cents. No. 2 straw was 2¾ to 3¼ cents. No. 3 oil was 2⅝ to 3⅛ cents. No. 5 oils were 65 cents a barrel. The No. 6 oil was quoted at 35 to 45 cents.

Statistics will reflect closing of oil fields

In view of the exceptional situation that arose the past week because of the Mid-Continent oil field shutdowns, statistics of the industry for the immediately preceding period had relatively little significance.

The picture will be radically changed as soon as figures begin to reflect the shutting-off of the supply of new crude from the Mid-Continent.

In the week ended August 12, United States crude oil production came down sharply to 3,550,000 barrels daily, according to the American Petroleum Institute, from the all-time peak of the previous week, because of the restoration of week-end shutdowns in Texas. But for the week of August 19 the emergency closings throughout the Mid-Continent are reflected, and the lowest production of recent times was indicated by this publication's estimates, as published on another page.

Crude runs to stills remained relatively high at 3,460,000 barrels daily in the week ended August 12, according to the A.P.I. But they, like crude production, were due for a sharp decline in the week of August 19.

Gasoline stocks came down only about a half million barrels, to 75,859,000 barrels in the week ended August 12, the A.P.I. showed. But large withdrawals are in store during the shutdowns.

Stocks of gas oil and distillate fuels were increased about 600,000 barrels in the week ended August 12, and then were 5.5 percent larger than one year previously. Inventories of residual fuel oils, meanwhile, were reduced about 200,000 barrels, and at the end of the week were 6.6 percent smaller than at the corresponding time last year.

Crude oil stocks were increased about 400,000 barrels, to 268,982,000 barrels in the week ended August 5, latest period covered by available statistics. At that level they were 6.4 percent lower than one year previously.

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1937						
August 28	[5]3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25	3,666,300	[1]3,455,000	307,974,000	65,620,000	116,472,000	
1938						
March 19	3,433,550	3,080,000	306,380,000	[1]93,192,000	122,067,000	
July 30	3,316,400	3,240,000	288,514,000	76,864,000	27,573,000	116,721,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	29,747,000	117,179,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	31,183,000	119,285,000
October 29	3,237,500	3,145,000	275,824,000	67,590,000	33,690,000	120,029,000
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
November 26	3,260,900	3,295,000	270,563,000	68,628,000	33,749,000	119,885,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,587,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
1939						
January 28	3,248,250	3,235,000	271,763,000	77,279,000	26,583,000	112,766,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	23,419,000	110,252,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	21,487,000	107,551,000
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,058,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
May 20	3,438,400	3,460,000	277,068,000	84,294,000	26,389,000	109,405,000
May 27	[2]3,585,250	3,405,000	278,289,000	84,152,000	26,992,000	109,386,000
June 10	3,376,950	[1]3,510,000	274,692,000	82,716,000	29,357,000	111,239,000
June 24	3,452,800	3,430,000	272,297,000	81,733,000	30,239,000	111,726,000
July 1	3,463,000	3,480,000	271,567,000	81,102,000	31,230,000	113,388,000
July 8	3,529,800	3,420,000	269,348,000	80,823,000	32,435,000	113,494,000
July 15	3,529,700	3,390,000	[3]268,199,000	79,416,000	33,673,000	114,075,000
July 22	3,583,750	3,395,000	268,447,000	77,960,000	34,366,000	114,035,000
July 29	3,539,100	3,460,000	268,513,000	77,887,000	34,900,000	114,053,000
August 5, 1939	[1]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 12, 1939	3,550,100	3,460,000	.....	75,859,000	36,239,000	114,309,000
August 13, 1938	3,559,900	3,295,000	[4]287,406,000	74,387,000	[8]	[9]
Change in past year	—0.3%	+5.0%	—6.4%	—1.9%	+5.5%	—6.6%

[1] All time peak. [2] Peak for 1939. [3] Lowest for 17 years. [4] Stocks, August 6, 1938.
[5] Peak prior to 1939. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] Available data for year ago include only stocks at refineries, and not at terminals, in transit, etc., except in California. Those stocks on August 12, 1938 totaled 27,480,000 barrels, and comparable stocks on August 12, 1939, totaled 28,994,000 barrels, or 5.5% more.
[9] Available data for year ago include only stocks at refineries, and not at terminals, in transit, etc., except in California. Those stocks on August 12, 1938, totaled 117,395,000 barrels, and comparable stocks on August 12, 1939, totaled 109,604,000 barrels, or 6.6% less.

Louisiana Probe

New indictments are expected . . . Burford is freed of hot oil charge . . . Court told many "special" production permits have been granted

New Louisiana oil indictments expected

Expected indictments against several oil firms and Louisiana state officials were not returned last Friday because of the absence of John Rogge, assistant United States attorney general. Rogge was in Dallas, where he is conducting a hearing for Freeman W. Burford, president of East Texas Refining Company and affiliates, who was indicted on August 7 on a hot oil charge. Also indicted at the same time and on similar charges were former Governor Richard W. Leche and Seymour Weiss, hotel man.

Rogge held up the indictments at New Orleans until he could return, despite the fact that the grand jury foreman was to be relieved today so he could start his vacation. United States Judge Wayne G. Borah ordered the group to remain in session until Monday, when Rogge is expected back in New Orleans.

Judge frees Burford in Louisiana hot oil case

Freeman W. Burford, president of the East Texas Refining Company, and jointly indicted by a federal grand jury with former Governor Richard W. Leche of Louisiana and Seymour Weiss, Louisiana hotel operator and political power, on charges of violating the Connally hot oil act, was ordered dismissed from custody by Federal Judge T. W. Davidson at the conclusion of a hearing in Dallas, Texas, last week. Burford was fighting extradition to Louisiana.

Several sensational charges relating how Louisiana's oil conservation authorities issued special production permits in 1936 were disclosed during the hearing.

The director of the mineral division of the state's conservation department testified that the granting of "special permits" was not unfrequent in new fields and in areas where there were no offsets, and that he signed any order he was told to sign by his superiors without asking questions.

Meanwhile, Burford detailed the transaction in which he agreed to purchase 1,000,000 barrels of Rodessa oil, and of his conferences with Seymour Weiss, New Orleans hotel man who made the arrangements. He testified that the $100,000 paid to Weiss had been earned in commissions for finding a buyer for the pipe line he constructed from his East Texas refinery to Rodessa, after an injunction had stopped the flow of oil through it.

Burford declared the deal was for 1,000,000 barrels to be purchased from Pelican Oil & Gasoline Company at the rate of 20,000 barrels daily. He was to pay 80 cents a barrel to Pelican and 10 cents per barrel to Weiss for the oil, which was to be produced under special orders issued by the Louisiana conservation department. After these arrangements, he testified, his company, the East Texas Refining Company, constructed a line to the field. Burford testified as to his efforts to get federal tender board approval, and the subsequent suit and injunction that stopped the shipment of the oil.

Later, Burford continued, Weiss told him the United Gas System would be interested in buying the line; and it was finally sold for $950,000, which earned Weiss a commission of $100,000.

Disclosure of the special production permits granted to different producing concerns came from Dr. J. A. Shaw, director of the minerals division of the Louisiana conservation department, who said this was not unusual and that there were no proration meetings held in the state.

Shaw admitted he "did what he was told to do," because he either had to or lose his job. He said he was asked by Weiss and former Governor Richard Leche, both indicted on the same charges with Burford, to sign the order. Asked if the public knew of the special order, Dr. Shaw testified the public didn't known anything about any of them.

The court has not yet made a decision on Burford's extradition fight.

East Texas Proration

Humble proposes acre-feet of sand, structural position, bottom-hole pressure, permeability and porosity be considered in proration plans

Humble presents case for higher East Texas flow

In Austin on Wednesday, August 16, Humble Oil & Refining Company began presentation of its argument to show that the method of allocation used in the East Texas oil field should be revised to take into consideration several factors other than potentials. The company had applied to the commission more than a month ago asking for a readjustment of the allowable and had obtained subsequently from the federal court at San Antonio injunction based on this plea.

At the August 16 hearing, the company presented a carefully documented case intended to show that they were entitled to a materially higher allowable in the East Texas field, an allowable more nearly in proportion to the number of acre-feet of producing sand which the company has under its leases. Through geologists, it presented isopach, water, and lease maps of the field, as well as numerous cross sections from east to west and from north to south, based on data obtained from Schlumberger logs.

Opposing the Humble and assisting the commission in substantiating its present order were Attorneys Madden Hill, F. W. Fischer and Angus Wynne, flanked by Petroleum Geologist J. S. Hudnall.

As Humble developed the locations and conditions of 158 leases in the field, independents centered their attack on the fact that some 63 leases lie east of that point in the fairway beyond which there is no bottom-water. They contended, and Humble did not deny, that on many of these properties there is now in place as much oil as there ever was, despite the fact that the properties have been subject to withdrawals for a period of about 9 years. It appeared that the independent group would attempt to show that Humble had no cause for complaint under these circumstances, and that while this method of allocation might be applied, the Humble company had not been injured.

Suggest Proration Plan

The revised plan of proration suggested by I. L. Sorenson, evaluation geologist for Humble and East Texas district geologist for some eight years, should include acre-feet of sand, position on structure, bottom hole pressure, porosity and permeability. Sorenson had no combination of these factors to offer, but insisted that all or most of them should be considered in preparing an equitable order. He was equally insistent that potential should be omitted entirely, although he agreed that some of the factors described above had a natural effect upon the potential of the well.

Humble attorneys frequently called the commission's attention to federal court holdings that a new order for East Texas must be substantially different from the current order if it is to be valid.

The purpose of this line of argument seemed to indicate that Humble attorneys laid some credence in a rumor current in Austin that a group of East Texas independents was seeking to have the commission adjust its order

to increase the potential factor to a point that would allow a spread of 10 barrels between the best and poorest well in the East Texas field. Thus marginal wells would be given 20 barrels and the best wells, 30 barrels. The plan suggested provides for an increase in the top allowable to approximately 650,000 barrels daily and contemplates compensating reductions in other fields to prevent production in excess of demand.

The Humble hearing was expected to develop fully operating conditions in the field, as 4 petroleum engineers were prepared to support the Humble testimony.

After this hearing was concluded, the commission was to present evidence at another hearing separately docketed at which it proposed to determine whether Humble Oil & Refining Company, to obtain density parity with other leases in the East Texas field, should be granted additional special permits to drill wells. Not only the Humble, but numerous major companies offsetting its leases planned to fight this proposal.

Many Attend

Nearly 200 operators, including many top flight executives of major companies, attended the hearing to observe the method of procedure and become informed on the unusual phases of the situation.

Crude Production

Production holiday closing 64 percent of yield brings U. S. output down to 2,274,300 barrels

PLUMMETTING to its lowest level since the early 1920's, crude oil production in the United States during the week ended August 19 averaged 2,274,300 barrels daily. Shutdown in Mid-Continent states cut off 64 percent of the country's production and held output 1,317,225 barrels below that of the week before, and 1,676,525 barrels below the all-time production high reached only two weeks previous. Also it was below the Bureau of Mines estimate of requirements by 1,347,600 barrels. Texas' closing down 5 days cut 999,850 barrels off its output of the week before, and Oklahoma, Kansas, New Mexico, Arkansas, and Louisiana, joining in order, slashed 359,525 barrels from the preceding week's average.

Texas put together one day of normal production and four days of progressively increasing water exemptions to average 389,500 barrels daily; off 999,850 barrels from the week before and comparably below the bureau estimate.

California, unaffected by the week's developments, produced 627,400 barrels daily in gaining 13,800 barrels on the previous week and overstepping conservation limit by 29,100 barrels. Federal quota was exceeded by 32,300 barrels.

Louisiana, last to join the shutdown, lifted 229,500 barrels daily in cutting 37,275 barrels from the previous week's average. Two days of idleness brought output 12,102 barrels below state allocation and 29,800 barrels below the bureau.

Oklahoma, shut down at midweek, produced 245,000 barrels daily, or 197,700 barrels less than the week before and 183,000 barrels less than conservation quota.

Illinois produced 311,600 barrels daily to establish another record and exceed the previous week and the bureau by 28,950 and 109,700 barrels, respectively.

Kansas' curtailed production averaged 98,000 barrels daily to cut the previous average 72,825 barrels. Arkansas, last of the shut-in states produced 60,150 barrels daily, 3875 less than the week before.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

Note: The figures indicated below do not include any estimate of oil surreptitiously produced.

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (August)	State Allowable in Aug.	BARRELS DAILY FOR WEEK ENDED Aug. 19	Aug. 12
TEXAS—				
Texas Panhandle			19,800	70,750
North Texas			45,250	90,500
West Central Texas			9,500	32,200
West Texas			64,700	257,500
East Central Texas			50,450	101,400
East Texas Field			80,950	378,550
South Texas			60,300	227,900
Texas Gulf Coast			58,650	230,550
Total Texas	1,428,100	1,393,225*	389,500	1,389,350
CALIFORNIA—				
Long Beach			45,700	46,300
Santa Fe Springs			27,700	28,200
Huntington Beach			26,600	26,200
Dominguez			17,100	19,800
Ventura Avenue			35,500	36,000
Midway-Sunset			55,500	46,500
Kettleman Hills			52,300	51,100
Wilmington			86,100	85,100
Others			280,900	274,400
Total California	595,100	598,300†	627,400	613,600
OKLAHOMA—				
Oklahoma City			52,555	102,725
Seminole Area			69,970	122,700
Fitts			12,000	23,750
Others			110,475	194,025
Total Oklahoma	448,100	428,000	245,000	442,700
LOUISIANA—				
North Louisiana			58,500	66,825
South Louisiana			171,000	199,950
Total Louisiana	259,300	241,602	229,500	266,775

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (August)	State Allowable in Aug.	BARRELS DAILY FOR WEEK ENDED Aug. 19	Aug. 12
ILLINOIS—				
New Pools			303,650	273,350
Old Pools			7,950	9,300
Total Illinois	201,900		311,600	282,650
KANSAS—				
Burrton-Haven			5,600	10,575
Russell County			15,125	27,000
Silica			6,100	10,075
Others			71,475	123,175
Total Kansas	168,700	164,000	98,000	170,825
NEW MEXICO	111,000	111,000	65,250	110,200
EASTERN STATES—				
Pennsylvania Grade			72,350	75,550
Others, Eastern			21,050	21,800
Total Eastern States			93,400	97,350
MOUNTAIN STATES—				
Wyoming	77,100		63,250	65,650
Montana	16,400		16,450	16,400
Colorado	3,900		3,800	3,950
Total Mountain States	97,400		83,500	86,000
MICHIGAN	54,200		71,000	68,050
ARKANSAS	51,900	64,991	60,150	64,025
Total United States	3,521,900		2,274,300	3,591,525

* Daily average under normal conditions, considering Saturday-Sunday shutdowns, water exemptions and exemption at Rodessa.
† Recommendation of Central Committee of California Oil Producers Association.

A.I.M.E. investigates education in geophysics

The Committee of Geophysics Education of the Mineral Industry Education Division of the American Institute of Mining and Metallurgical Engineers recently announced results of an investigation into the status of geophysics courses in the universities and the manner in which the subject is taught. The questionnaire was sent last year to a representative list of universities in the United States, Canada and abroad, the committee having endeavored to elicit information as to the manner of teaching geophysics, in what department the courses are given, what preparation is required, and what phases are stressed.

The filled-in questionnaires were returned to the individual committee members, who then drew their own conclusions therefrom and transmitted the material to the committee chairman.

Altogether, 147 universities in the United States, Canada and foreign countries have been circularized, 97 of which cooperated by replying in some manner.

Separate departments of geophysics are maintained abroad in the University of Messina and at the University of Strasbourg. Although not included in these figures, we are informed that the University of Naples also maintains a department. No Canadian universities have such a department, but two in the United States, the Colorado School of Mines and St. Louis University, do.

Geophysics is taught as a definite course in 3 Canadian universities, Toronto, McGill, and Queens. In the United States geophysics courses are given at 30 universities. These figures do not include the universities with departments, which have been listed separately above. Including the universities in the United States with departments raises the total to 32 universities, or 39 percent.

A course in geophysics (magnetic prospecting) was established in the mining department of the Technical University of Stockholm in Sweden about 1885.

In addition, the subject of geophysics is discussed to some extent in the course of lectures on geology, physics or engineering at a number of other universities. The Ecole des Mines in Paris is the only foreign one replying which treats the subject in this manner. In Canada 5 universities handle it in this way, and in the United States 44 pay some attention to the subject.

Of the 49 universities in Canada and the United States which treat the subject of geophysics incidentally in other lectures, the largest proportion, 15, handle it in the geology department. It is dealt with in geology and physics departments in 5. Geophysics is introduced in the mining and metallurgical department at 2 universities; one university handles the subject in its engineering department, and one in its optics institute. Four other universities refer to geophysics, but did not mention the course in which the references occur.

The following data concerns prerequisites for courses in geophysics required by American and Canadian universities.

Five universities, or 16 percent, require only elementary college mathematics and do not include calculus. The largest proportion, 13 institutions, or 40 percent, require differential and integral calculus. A still higher standard is maintained by 10, or 31 percent, which require differential equations. Altogether, 28 universities out of 32, or 87 percent, specify that they require some college mathematics before a student can enroll in a course on geophysics. From this evidence it would seem that calculus is practically a prerequisite, and that a student who really wants to go into geophysics thoroughly should also have differential equations.

Applying this same reasoning to the course in physics, it can be assumed that where only one year of general physics is required, or when an unspecified physics is mentioned, an elementary course only is envisaged. If more than one year is required, or specific courses are mentioned, it may be called advanced physics. Where electrical engineering is mentioned as a requirement it can be safely assumed that advanced physics would be a prerequisite for that course, and hence for geophysics as well.

On this basis, 21 universities of the United States and Canada require only elementary physics. Advanced physics is required by 11. Evidently most of the geophysics courses must be taught on a fairly elementary basis, but it should not be overlooked that physics of some kind is a 100 percent prerequisite.

Elementary chemistry only is mentioned as a prerequisite by 11. Only 2 require qualitative analysis without quantitative. Both qualitative and quantitative are mentioned by 3, and physical chemistry is required by 4. To summarize, advanced chemistry of some sort is required by 9 universities, and chemistry, elementary or advanced, is a prerequisite in 20 out of 32 universities. Chemistry therefore ranks below mathematics as a prerequisite.

Only 8 universities, or 25 percent, mention mineralogy as a necessary subject.

When turning to geology courses, the variety is too great to attempt the same sort of grouping as was achieved for mathematics and chemistry. However, dividing the subject into one year requirements, or elementary geology (in which engineering geology is included) and advanced geology, we obtained the following figures. The majority of the universities, 60 percent (19), require only elementary geology. Advanced geology is demanded by a little over a third (12). The most frequently mentioned courses in advanced work are historical geology and structural geology, each demanded by 5 universities. Economic geology comes next, with 4 out of 32. In sum, geology is required by 31 out of 32 universities, or 97 percent. The one institution not mentioning geology does specify mineralogy, and including the latter subject as a geological one, geology is a 100 percent prerequisite.

Thus: Physics and geology are universally demanded as prerequisites in studying geophysics; college mathematics comes second, being demanded in practically 9 out of 10 cases; and that chemistry is third, and is required in approximately two-thirds of the courses.

This instruction in geophysics has been concentrated on approximately 436 undergraduate and 91 graduate students, plus another 32 whom the professors did not classify, making a grand total of 559 students now studying geophysics in the 32 universities offering courses on that subject in the United States and Canada. The highest enrollment of 77 is found in the Colorado School of Mines, but 4 other institutions have 40 or more students each, with Queens University in Canada ranking second with 49 students.

This year the committee is sending out questionnaires to graduate geophysicists and to employers. The objective is to learn from men engaged in professional work the exact feeling toward present academic preparation.

The 1938 committee was composed of Sherwin F. Kelly, chairman, C. H. Behre, Jr., L. W. Blau, W. R. Chedsey, E. A. Eckhardt, James Fisher, C. A. Heiland, H. W. Straley, W. B. Plank, F. H. Probert and L. B. Slichter.

The 1939 committee includes S. F. Kelly, chairman, Frank H. Probert, vice chairman, C. H. Behre, L. W. Blau, W. R. Chedsey, G. C. Gester, C. A. Heiland, M. K. Bubbert, F. S. Hudson, J. B. Macelwane, W. B. Plank, H. W. Straley, W. T. Thom, Jr., and Clyde H. Wilson.

American company gets more concessions in Arabia

Standard Oil Company of California made the following announcement concerning the new oil concession recently granted to California Arabian Standard Oil Company, jointly owned by Standard Oil Company of California and The Texas Corporation, by the government of Saudi Arabia:

By agreement effective July 21, 1939, between the Saudi Arab government and California Arabian Standard Oil Company, the company acquired petroleum rights over an area of approximately 89,041 square miles in addition to the area of approximately 165,000 square miles already subject to its original concession agreement of May 29, 1933. The new area is slightly more than one half of the original concession area.

The new areas described in the agreement, which became effective on July 21, 1939, include one area in southerly Arabia lying west of and adjoining the original concession area; one area in northern Saudi Arabia adjoining the northerly Saudi Arab boundary and the westerly boundary of the original concession.

The agreement also includes the Saudi Arab interest in the Saudi Arab-Kuwait Neutral Zone and the Saudi Arab-Iraq Neutral Zone.

The agreement provides that the newly acquired areas shall be subject to the terms of the original concession agreement and is for a term of 60 years.

In connection with the new agreement the company is paying 140,000 English gold pounds ($1,156,400) and agrees to pay 20,000 English pounds ($165,200) yearly rental until commercial discovery in some portion of the new areas or until surrender thereof.

The company is obligated to deliver substantial quantities of gasoline and kerosene to the Saudi Arab government during each year of the concession.

WEEK'S DRILLING HIGHLIGHTS

REPORTS from several districts throughout the states affected by the general closing in of wells indicate that to a limited degree well completions will be retarded by cutting off gas supplies. In those areas where dry gas is available or other fuel is used, development work apparently has not been affected.

Rocky Mountain Area

The idea of deep drilling seems to have occurred to operators throughout the district all at one time. Results of work in some older fields has been successful as encouragement. More important, perhaps, of pending projects are tests to the Sundance in the Fort Collins, Colorado, field, and an 8000-foot try of the Rattlesnake shallow area in New Mexico.

East Texas

A revival of interest in the Trinity in the Woodbine belt is seen with 3 projects underway. Trinity drilling seems destined for more attention, as the Woodbine zone has yielded little encouragement during the last several years.

West Texas

Indicated success of a wildcat on the Cedar Lake structure, Gaines County, may mark a new trend in the upper portion of the Permian Basin. Most easterly strike in the area, Cedar Lake, is 26 miles from nearest production at Seminole and 33 miles from Wasson. Field work in the district is being slowed by the production holiday which has cut off fuel gas for a number of operations.

New Mexico

Flow of 100 barrels per hour indicated a large producer is being completed in the west portion of the Mattix field. Drilling is expected to continue normal through the period of production shutdown, and producers have hopes of getting back allowable to cover the holiday.

South Louisiana

Possibility of adding several hundred acres to Eola's producing area is seen in formation data revealed by a test on the northeast. Still another producing sand is indicated at Venice.

Illinois

Two wells that might extend Barnhill production in Wayne County testing saturated sands. State regulations go into effect, providing for permits to drill, set forth procedure in drilling through coal mines and require supervision by an inspector when abandoned holes are plugged.

Kentucky

Four wildcat starts give Hancock County lead in drilling activity.

Michigan

A Clare County wildcat was completed as a gas well; a Midland County test had a show of gas, and another wildcat in Isabella County had oil saturation in Traverse lime. Meanwhile the Walker field in Kent County was getting an extension and Bloomingdale in Van Buren County was completing its first year of production with a record for a single field's total production in the state.

California

Highlights of the week in California include an oil sand in another test of the East Coalinga Eocene area; encouraging showings of oil and gas in the Buena Vista area of Kern County, and further extension of the Arvin section of the Mountain View area. Drilling is reviving in the Dudley Ridge area.

Southwest Texas

Final production tests are under way on four tests opening new fields in the Lower Coast area, and new fields are opened in the Rio Grande Valley area and in Webb County. More perseverance will be required, however, in the Batesville (Uvalde-Frio) area, as the eighth try has failed.

Comparison of Permits Granted for New Wells

STATE	Week Ending Aug. 19	Total this Mo.	Total this Year	Total this Date Last Year	1938 Year Total
Arkansas	3	13	154	159	247
California	26	80	657	796	1,146
Louisiana	45	86	801	863	1,214
Kansas	35	69	970	1,020	1,453
Michigan	34	70	882	518	953
N. Mexico *	16	41	.....	.....	.....
Oklahoma	37	114	1,328	1,309	1,978
Texas	177	540	6,779	8,576	12,369
Total	373	1,013	11,612	13,421	19,360

*Data for New Mexico prior to August not available.

Summary of Wells Completed in the United States Week Ending August 19, 1939

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1939	Total this Date 1938
Alabama	....	....	....	....	.....	1	2
Arkansas	5	4	....	1	1,779	151	147
California	18	17	....	1	8,367	675	803
Colorado	....	....	....	....	.....	15	5
Florida	....	....	....	....	.....	....	.....
Georgia	....	....	....	....	.....	1	1
Illinois	78*	55*	1	22	19,595	2,391*†	858
Indiana	....	....	....	....	.....	112	79
Kansas	35	25	2	8	123,542	872†	1,104
Kentucky	12	5	3	4	270	409	484
Louisiana	19	15	....	4	4,255	663	712
Michigan	29	20	1	8	10,330	909	546
Mississippi	....	....	....	....	.....	7	11
Montana	4	2	....	2	272	92	44
Nebraska	....	....	....	....	.....	1	1
New Mexico	13	12	....	1	4,918	396	339
New York	19*	16*	1	2	54	357*	476*
Ohio	12	4	8	....	83	580	601
Oklahoma	46	28	3	15	4,894	1,332†	1,428
Pennsylvania	43*	35*	7	1	77	992*	1,488
Tennessee	....	....	....	....	.....	....	2
Texas	190	139	7	44	95,352	6,329	8,378
Utah	....	....	....	....	.....	....	2
West Virginia	18	2	12	4	4	333	445
Wyoming	1	1	....	....	2,520	85	73
Total this week	542	380	45	117	276,212	16,690	17,928
Total last week	598	395	53	150	414,111	16,148	17,326
Total this year	16,690	11,376	1,188	4,126	12,395,168	....	.....

* Includes water-input wells. † Includes salt water disposal wells.

Oklahoma Fields

Sac and Fox pool extension well heads 100 barrels daily.

Offsets starting to Seminole and Kiowa County strikes.

Tulsa.—A south outpost to Sac and Fox pool, Lincoln County, headed 100 barrels of oil daily from the Prue sand topped at 3029 feet and drilled to 3111 feet. Tubing had to be rerun prior to final testing. An interesting wildcat for the county was staked two miles southwest of Davenport. Portable Drilling Company has derrick up with 100 feet of surface pipe down at Nickell 1, SEc 17-14n-5e. Location is on a 1000-acre block, containing a seismograph-indicated high. Rotary equipment is being moved to location.

Tidewater Associated Oil Company had a show of oil in the NEc SE 23-26-4e, edge of Olson pool, Osage County, when the bit was stopped at 3157 feet in semi-saturated sand, located structurally high for the area. This test is ½ mile from Olson and other Burbank sand producers in 24-26n-4e.

The recent Fish pool extension well, Seminole County, drew a north offset. Winoma Oil Company was drilling at Davis 1, SEc NW 6-6n-8e, a north offset to Eagle Oil Company's Ryan 1, NEc SW 6-6n-8e. Forced offsets are due to the east and northeast. Two miles east of the extensioner, Rogers and Rogers were rigging up to drill Warren 1, SEc 4-6n-8e, across the boundary line in Hughes County.

With final completion of Gled Oil Company's Watkins 1, Kiowa County, opener of the Hobart pool, a new offset drilling is planned. A south offset to Shell Oil Company's Ratliff 1 will be drilled by Phillips Petroleum Company in NEc SE 19-7-17w. Shell Oil Company has a proposed location south of the Watkins discovery. At present there are 4 dry holes in the area and 2 producers. Watkins 1 is rated from 1500 to 2000 barrels daily and Ratliff 1 was completed for 311 barrels in 14 hours.

Pottawatomie County saw 2 wildcats fail, 2 others nearing prospective pays and a new location staked. North of the Earlsboro pool, J. B. Clark, Inc., abandoned Kottke 1, NWc NE 5-9n-5e. First Wilcox sand was dry with a show of oil picked up in the second sand. Operators changed to cable tools for drilling plugs which resulted in only a swab of oil. Total depth reached was 4453 feet. The Gray pool was defined on the south as J. E. Trigg's Voight 1, NWc 30-6n-5e, missed the Earlsboro pay entirely.

Northwest of the Shawnee pool, Pottawatomie County, Yorkan Production Company et al's Bewley 1, NWc 26-11n-3e, was below 5100 feet. Kirk-Green-Way Drilling Company's Boland 1, SE NE NW 28-11n-3e, was rotating below 5425 feet in lime. A half mile west of Tescumseh pool, J. B. Clark, Inc., et al's staked location in NEc SE 31-9n-3e. The Tescumseh pool produces from Dolomite at 5165 to 5230 feet.

Pure Oil Company's Noble 1, C NE SE 35-3s-1e, northwest of Ardmore, Carter County, perforated in Sycamore formation from 4107 to 4200 feet, but recovered only drilling mud on a drill-stem test. The hole will be deepened.

East of the Fitts pool, Pontotoc County, Simpson-Roodhouse Drilling Company moved in tools for McKoy 1, SWc NE 1-2n-7e.

In 13 hours prior to the shutdown time, The Texas Company's Longan 2, C E½ NW NW 12-17n-1e, Coyle pool, flowed 255 barrels, after deepening hole in first Wilcox sand from 4869 to 4880 feet. Helmerich and Payne, Inc., completed Collins 1, C E½ NW NW 13-17n-1e, south end of the pool, for an undetermined gauge, after flowing considerably more oil than the per well allowable, 75 barrels. Same company's Collins 2, was below 4295 feet and will core Hunton lime. Collins 3 is yet a location, awaiting completion of Collins 2. The Texas Company staked location for Longan 3, C W½ NE NW 12-17n-1e, an east offset to Longan 2, northeast edge of Coyle pool.

One mile west the Lovell pool, Logan County, Jones Associated Oil Company was rigging up Rigdon 1, C W½ NE SE 29-18-4w. Location is on an 800-acre block. Creek County saw a wildcat location staked in Fred Cusack's Powell 1, NEc 35-14n-9e, south of Newby pool. Southeast of Arnett, Ellis County, John Gregory staked an outpost in Dunn 1, C SW NW 6-16n-23w.

In Noble County, J. E. Crosbie et al's Robbins 1, SWc NW 6-22-2w, on Billings-Garber trend, topped Hoover at 2425 feet, to check on par with Polo pool, and now drilling below 2550 feet. Southeast of Tonkawa, Robert Ellis et al's Stransky 1, SWc NW 35-24n-1w, had a machine on the wildcat location.

A wildcat 2 miles northeast of Ocina, Beckham County, was testing after getting a show of oil. Great Northern Drilling Company et al's test in 26-8n-22w, picked up a show at 1130-39 feet and drilled to a total depth of 1140 feet. Operators were swabbing the hole after acidizing with 4000 gallons. The test is only a short distance from gas production.

Northeast of the Beeker discovery, Hughes County, Phillips Petroleum Company's Shemwell 1, C SE NW 8-5n-10e, made 50 barrels of oil and 650 barrels of water on artificial lift.

Hall-Briscoe, Inc., resumed drilling Thompson 1, SWc NE 28-13n-1e, 4 miles east of Jones, Oklahoma County. Last reported depth was 3375 feet with fast hole being made.

A Prue sand test for Lincoln County was underway in F. W. Cooper Drilling Company's Sower 1, SWc 15-15n-6e, northwest of Stroud.

Two miles east of Sumner, Noble County, Shell Oil Company's Mosena 1, C W½ W½ SE 9-21-2e, plugged to 3257 feet in Musselman sand and perforated from 3065-3167 feet. On a 20-minute drill-stem test, 550 feet of mud and 375 feet of fresh muddy water was encountered. Both first and second Wilcox sands were unproductive.

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbbls.	Depth
Carter—		
Pure, Noble 1, c ne se 35-3s-1e....	97	4453
Jones, Carter 8, nw sw nw ne 16-4s-3w	4	1371
Cotton—		
Costley et al, Ash 1, nw sw se 7-4s-10w	*	1310
Jackson—		
Vaughn, Stokes 4, sec sw 11-1n-20w	6	1616
Jefferson—		
McCall, Trout 1, se sec nw 17-7s-5w	8	781
Weir, Carmichael 1, nec sw 23-7s-7w	*	4986
Kay—		
Tidewater, Easterday 1, nwc ne 21-28n-1w	*	3716
Kiowa—		
Shell, Ratliff 1, sec ne 19-7n-17w.	528	1115
Tarr et al, Kelsey 1, swc nw 20-7n-17w 1680		1055
Marshall—		
Stewart et al, Chestnut 3, nw nec 23-8s-5e .....Abnd.		Lcn.
Muskogee—		
Tinch, Bell 2, ne nec 34-15n-18e..	10	1005
Noble—		
Stanolind et al, Sharp "A" 2, c s½ sw nw 34-20n-2w.....	106	4280
Oklahoma—		
I.T.I.O. Co., Button 8, ne sw sw 19-11n-2w	126	3074
I.T.I.O. Co., Wheeler 4, nwc se 13-11n-3w	*	4005
Okmulgee—		
Briscoe et al, Gill 1, ne nw ne nw 1-13n-12e	30	1705
Mid-Continent, Bearhead 3, c e½ se sw 19-15n-11e.....	25	3117
Bright, James 3, 200 ft e c n½ se 31-15n-12e ..... ¶3.5		2214
Misener, Jefferson 3A, sw ne sw sw 22-15n-14e ..... ¶2		680
Konawa, Masters 3, sw se sw 14-2n-7e	55	1419
Osage—		
Carper, 10, se sec 8-21n-9e.....	*	302
Higgins et al, 18, c w½ sw se 25-23n-8e	*	2633
Pawnee—		
Sheltz, Baker 1A, cs½ ne nw 7-20n-8e	*	2612
Pontotoc—		
Cooper, McKinley 3, nec nw 23-2n-7e	140	1371
Sinclair-Prairie, Burris 17, se ne nw 27-2n-7e	23	2563
Simpson et al, Statler 4, sec sw 34-2n-7e	110	1867
Boyle, Newborn 1, sw nw se 31-5n-4e	*	200
Malernee, Haynes 2, c s½ ne sw 32-5n-5e	13	1814
Pottawatomie—		
Amerada, Mitchell 1, nec 3-6n-4e.	250	4355
Magnolia, Tarter 1, sw nw sw 15-7n-4e	22	4020
Mudge, Baptiste 2, sec ne 20-7n-4e.	50	3570
Smith, Brandenberg 1A, sw se nw 21-7n-4e	*	3700
Sinclair-Prairie, Neely "B" 4, sw se sw 25-7n-4e	100	4227
Taber et al, Cramer 1, nw se ne 27-7n-4e	*	4130
Mid-Continent, Kah-Dot 5, nw ne se 36-7n-4e	500	4358
Wood, Swan 4, ne nw se 36-7n-4e.	130	4319
Alma et al, Simon 1, sw se se 28-7n-5e	75	4280
Seminole—		
Sunray, Shuermeyer 1, se ne sw 12-6n-5e	125	3811
Wood et al, Tobin 3, ne nw nw 22-7n-5e	240	3000
Commercial, Cheparnee 1, ne sw ne 35-7n-5e	*	3084
Atlantic, Reed 1, nw sw ne 21-7n-6e	50	4422
Eason, Fish 2, ne swc se 19-7n-8e.	383	4088
Wood, Aldridge 1A, sw nw ne 5-8n-8e	*	1910
Stephens—		
Carter, Spears 2, se sw se nw 15-1s-5w	8	645
Sykes, Franklin 10, se nw se se 18-1s-8w	*	2066
McAllister, Godfrey 1, nw se ne nw 11-2s-8w	*	2136
Tulsa—		
Trowbridge et al, McIntosh 3, c e½ ne se 7-18n-14e..... ¶0.3		970
Washita—		
Washita A & G Co., Harms 1A, c nw ne 6-10n-16w.....	*	6000

*Failures; †Junked; ¶Million cu. ft. gas.

Kansas Field Developments

Labette County pool opener has initial of 112 barrels.

Active wildcat drilling work on par with recent weeks.

Wichita.—Kansas added a new pool for Labette County, and extensions for several pools were indicated. Active wildcatting is on par with previous weeks.

D. H. Morgan and J. A. Jensen gave the state a new pool as Ball 1, NEc SE 35-34-18e, 9 miles east of the Coffeyville oil and gas district, was completed for a potential of 112 barrels of oil daily from Arbuckle lime at 1155 feet. Location is on a block of 2000 acres. The oil was 29 gravity.

Montgomery County's new pool opener, Lerke and Whortan's Clemmer 1, C SW SW 21-32-15e, was completed for a potential of 120 barrels in 24 hours from Arbuckle lime topped at 1531 and drilled to 1537 feet.

Walters pool, Ellis County, was extended southward as Doley Oil Company's Joy 1, NE NW NE 14-12-18w, made 51 barrels of oil in 24 hours from Arbuckle lime at 3670-3676½ feet. After acidizing with 300 gallons, 2000 feet of oil rose in the hole. In the same county, Margay Oil Corporation et al's Simpson 1, NEc SE 3-11-17n, north of Bemis pool and northwest of Cress pool, was drilling below surface pipe. This wildcat will attempt to extend Bemis production, being 2½ miles north of the prolific field. Three-quarters mile southwest of production in Walters pool, Snakard et al's moved in for Baker 1, C S½ SW NE 15-12-18w.

Gulf Oil Corporation's south extension test for Brown pool, Cowley County, Raymond 1, NEc SW 33-30-4e, swabbed 247 barrels of oil in 1½ hours from Arbuckle lime at 3271-3273 feet. The county recorded two failures. Phillips Petroleum Company abandoned Glantz 1, SEc NE 3-31-3e, a mile north of the Udall pool, after coring dry Arbuckle lime at 3438 feet. Margay Oil Corporation et al's Wakefield 1, SE NW NE 24-30-5e, between Fox-Bush field and Eastman pool, was given up at 3332 feet in Arbuckle lime.

An offset to the Labette County pool discovery was started by the operators of the initial well. It is Thomas 1, SWc SW NW 36-34-18w.

Two Barton County wildcats were testing for Arbuckle lime pay. Crown Petroleum Company's Marchand 1, NE SE NW 13-20-12w, southwest of Ellinwood pool, topped Topeka lime at 2962 feet and shut down operations at 3384 feet in Arbuckle lime with a show of oil. Triangle Drilling Company's Bredford 1, CSL SE SW 25-16-11w, topped Topeka lime at 2920 feet and was rotating in Arbuckle lime. North of Kraft pool, Barton County, Kingman Oil Company staked location for Harzman 1, C W½ NW SW 33-16-11w.

Near the rich Prusa pool two outposts were started. C. E. Ash and Crown Petroleum Company were rigging up to drill Montgomery 1, NWc 11-16-11w, 3½ miles northeast. Three miles southwest of the pool, Bradley et al's Dolechek 1, CEL SE NW 26-16-12w, set surface pipe.

Several tests in Rice County were not showing up to expectations as the week closed. Skelly Oil Company's Bernstorf 1-B, C S½ NW SW 23-19-10w, northeast Silica pool, made 3 barrels of crude and 131 barrels of water from Lansing lime topped at 3021 feet. The test was carried to 3285 feet in Arbuckle lime, where plugs are being drilled in that zone as a show of oil was encountered. Same operators Bernstorf 1-C, C S½ SE NE 27-19-10w, a north offset to production, was drilling below 3061 feet. East of Silica, Phoenix Drilling Company's Linville 1, SWc SE 4-20-10w, was drilling to Arbuckle lime after filling 400 feet with fluid, two-thirds being oil, in the Kansas City-Lansing zone. Bridgeport Machine Company had hole full of water at 3288 feet in the Conglomerate at Gouldner 1, C E½ SE SE 5-18-9w, 1 mile northwest of Gouldner pool. Operations were suspended. Herndon Drilling Company's Gray 1, SWc NE 30-18-7w, ¼ mile northeast of Geneseo pool, Rice County, picked up a show of oil at 3194-97 feet in Arbuckle lime. Five and one half inch casing was run to 3195 feet, 1 foot in the lime and operations were held up for cement. The test also had a good show of oil in Lansing-Kansas City series at 2860-65 feet.

An extension failure for the Vaughn pool, Russell County, showed at Central Petroleum Company's Crissman 1, SW NW NE 20-14-14w, ¾ mile east of production. Hole was abandoned at 3335 feet in granite. Both lime formations, Lansing and Arbuckle, proved unproductive. Phil-Han Oil Company started a west extension test for South Gurney pool, Russell County, at its Mai 1, CNL S½ NE 34-14-14w. Three-quarters mile southeast of Big Creek pool, Hays and Potter were rigging up rotary at Bonfelt 1, NWc 6-15-14w.

Kerr-Lynn Oil Company and Indian Territory Illuminating Oil Company's McMoran 1, C SE NW 25-34-16w, 6 miles southwest of Aetna gas pool, topped Viola lime at 5410 feet and was drilling below 5650 feet. The test is in Comanche County.

North Otis oil and gas pool, Rush County, Crawford et al's Jones 1, NWc 35-17-16w, an old well initially completed as a gasser at 3620 feet, deepened and perforated at 3644-48 feet to get a hole full of water.

Flanking Forest City Basin, 2 tests have set pipe to test shows. Earl Wakefield et al's National Life Insurance 1, C NW NE 17-6s-20e, Atchison County, set pipe at 2155 feet and was drilling below 2595 feet. Hunton lime showed water at 2490 feet. Four miles west of Lone Star, Three Star Oil Company's Griffith 1, C NW SE 4-14-18e, set 8-inch pipe at 1360 feet to test Mississippi lime, hole bottomed at 1560 feet.

A gas extension test was staked by Skelly Oil Company at Sitton 1, C NW SE 26-27-11w, ⅜ mile west of Cunningham gas pool, Pratt County. Stanolind Oil & Gas Company was drilling at Seifkes 5, C NE 3-22-12w, a quarter mile from production in South Sittner pool, Stafford County.

Kansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton—		
Magnolia, Muller 6, nec 1-18-11w	394	2997
Stanolind, Rose 4, csl se ne ne 3-20-11w	1378	3287
Stueckemann 8, cfl sw ne se 11-20-11w	1260	3280
Butler—		
Maxwell, McGill 10, sec ne 31-24-4e	106	2691
Lucas et al, Lucas 1, ne nw nw 14-28-6e	*	1525
Cowley—		
Barnett et al, Waite 6, sw nw sw 21-31-4e	967	3382
Bartman et al, Waite 11, sw se sw 21-31-4e	5448	3313
McKnab, Charles 2, sw ne se 20-32-5e	356	3089
Ellis—		
Phillips, Hendrick 2, c n½ nw ne 13-11-18w	90,007	3351
Ellsworth—		
Continental, Rolfs 3, nwc ne 28-17-8w	1806	3247
Greenwood—		
Austin-Reed, Souders 2, nec sw 31-25-13e	*	1611
Blue Stem, Pottorff 1, swc nw 16-28-11e	*	875
Harvey—		
Davie et al, Martindale 2, cwl nw ne se 18-23-3w	1140	3369
Haskell—		
United Production, Collingswood 1, swc ne 30-29-34w	¶11.5	2808
Johnson—		
OK Supply et al, Knabe "C" 1, ne ne se ne 15-14-22e	10	852
Smith et al, Flacy 1, ne sw se se 16-14-22e	*	910
Marion—		
Lariaux et al, Forsberg 1, sec sw 21-17-4e	250	2387
Timm, Schick 1, se sw nw 28-17-4e	300	2429
McPherson—		
McBride, Heintzleman 1, sec ne 30-21-1w	239	3319
Pratt—		
Skelly et al, Harding 1, c sw 7-28-11w	¶0.8	4283
Reno—		
Dutton et al, Green 1, sec 8-23-4w	*	20
Transwestern, Teeten 7, c w½ ne se 12-23-4w	184	3439
Rice—		
Continental, Fergueson 2, sw ne ne 8-18-7w	*	3262
Seimsen 4, se nw nw 18-18-7w	1938	3225
Gray 1, nwc sw 19-18-7w	2770	3176
Okan Drilling et al, Shonyo 1, swc ne 34-19-9w	*	3316
Phil-Han, Haxton 1, cw½ se ne 30-19-9w	*	3296
Continental et al, Carlson 1, cwl nw ne ne 36-20-6w	659	3327
Shaffer et al, Bauer 1, c w½ sw sw 23-21-7w	790	3400
Russell—		
Phillips, Deines 1, c se ne 30-13-14w	1940	3312
National, Holl 1, sec 21-14-14w	2111	3064
Aylward, Holl 5, sec sw 22-14-14w	2633	3098
Coralena, Sellens 5, sw nw nw 17-15-13w	3214	3214
Sellens 6, ne se nw 17-15-13w	3607	3192
Sumner—		
Champlin, Love 5, sw nw sw 9-30-2w	35	3101

*Failures; †Junked; ¶Million cu. ft. gas.

Kansas commission personnel changes made

T. A. Morgan, director of the oil and gas conservation division of the Kansas Corporation Commission, last week announced a number of changes have been made in the personnel of the commission's 3 conservation agents and 14 district conservation agents, charged with plugging abandoned wells.

Conservation agents are C. T. Alexander, Great Bend; F. D. Carter, Wichita; and Ruel Durkee, Lyons.

District conservation agents and the counties to which they are assigned are: A. A. Ackerman, of Chanute, Neosho and Crawford counties; J. E. Brinegar, of Howard, Elk County; W. G. Buffington, of Geuda Springs, Sumner County; A. R. Daniel, of Garnett, Anderson and

Linn counties; B. W. Dunn, of Independence, Labette, Cherokee and Montgomery counties; Roy Elliott, of El Dorado, Butler County; Lee C. Garrett, of Sedan, Chautauqua County; A. W. Hartsock, of Eureka, Chase, Lyon and Greenwood counties; W. S. Lemaster, of Winfield, Cowley County; John McKinley, Humboldt, Allen and Bourbon counties; Frank Parsons, of Fredonia, Wilson County; J. D. Robinson, of Florence, Marion County; Hazen Sears, of Paola, Douglas, Johnson, Miami and Franklin counties; and Harry Webb, of Toronto, Coffey and Woodson counties.

Commission orders 20-acre spacing for Reynolds pool

Twenty-acre spacing for wells in Reynolds field, Jim Wells County, is provided in a new Texas Railroad Commission proration order. Although wells must be spaced 933 feet apart, they may be as close as 333 feet to lease lines. Proration is on straight acreage, and a maximum of 30 acres may be assigned to the final well in the proration unit.

Regulations provide for 1000 feet of surface casing cemented to the surface and an oil string set with a minimum of 300 sacks of cement.

A maximum gas/oil ratio of 2000/1 is provided, with a total displacement factor which applies equally to high gas/oil ratio oil wells and to dry gas wells producing from the oil reservoir.

More about wider spacing in Western Kansas

"Well Spacing Practice Shifts to 20-Acre Plan in Western Kansas" was the title of a rather complete discussion of spacing trends in that state appearing in the July 31 issue of THE OIL WEEKLY under the signature of Joseph A. Kornfeld, geologist and petroleum engineer.

While it discussed elimination of unnecessary drilling by utilizing the 20-acre pattern at Zenith and other fields, there follow herewith additional thoughts of the author on what the trend toward greater spacing has accomplished in several Kansas fields not discussed in the original article.

South Wherry Agreement

The 20-acre type of spacing was planned for South Wherry from time of completion, July 20, 1939, of the discovery well, E. J. Shaffer, Hutchinson, F. O. Ocker, and J. Colle's Bauer 1, located in CW½ SW SW Section 23-21-7w. Due to a mutual agreement at the outset of development, offsets have been drilled on the north of the 20-acre plan, with other offsets due to be staked on the same pattern.

Meanwhile, in the intervening proven area lying between South Wherry and Wherry pool, 1¼ miles northwest, development will proceed on a 20-acre spacing pattern, due to an agreement completed late in July between Mid Plains Oil Corporation, H. B. Garden, Hutchinson, and Bridgeport Machine Company. This area comprises portions of Sections 14, 15, 16, 22 and 23, except for 10-acre competitive locations unavoidable as a result of past precedent in prior development.

Barnholdt Pool Development

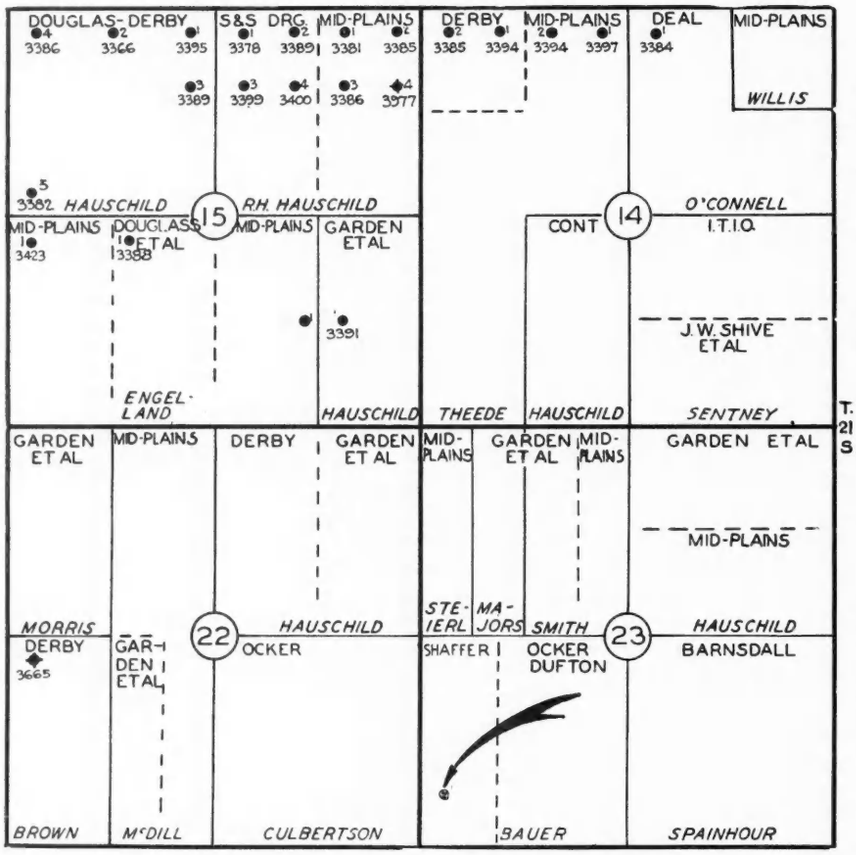
Another new area to utilize 20-acre spacing is the new Barnholdt (chat) pool of southwestern McPherson County and eastern Rice County. An agreement was completed on July 27 between Bradley Brothers, Tulsa Oil Corporation and Continental Oil Company whereby development in certain acreage located in Sections 36-20-6w, and 31-20-5w would be drilled henceforth on a 20-acre plan. First test to be started under this new pattern has been staked in CN½ NE SE Section 36, in Rice County.

Bloomer Extension Example

The southwestern Ellsworth County extension of the three-county Bloomer pool is now the scene of 20-acre spacing. First oil completion using this pattern in the pool is Spencer-Yarnell's Gemeinhardt "B"-3, CSL S½ SW Section 31-17-10w, which filled 1700 feet with oil in two hours from Arbuckle dolomite penetrated to 3266 feet. They are drilling the north offset on a 20-acre spot at CNL S½ SW Section 31.

Sullivan-Gorham Extension

Wolf Creek Oil Company commenced utilization of 20-acre spacing in development of its sizeable amount of proven acreage in the Gorham sand south extension of Sullivan pool in Russell County. The first location staked on July 23, was Roubach "B"-3, CS½ NE NW Section 15-14-15w. Previous development had been carried on without exception on 10-acre spacing pattern.



The South Wherry (conglomerate) pool of southeastern Rice County is another example of a recent discovery planned from its inception on 20-acre spacing. Intervening area between it and the Wherry pool proper will be developed on the same pattern due to an agreement among three principal operators in the immediate area.

Eighteen wells are now drilling in Missouri

St. Joseph, Mo.—At this stage of the Forest City basin oil play 18 wells are being drilled in the basin area; 3 more are going down outside the basin in the same state, and one is drilling in the Kansas sector of the basin. Since the first well was spudded on March 7, 5 deep tests and 4 shallow ones have been abandoned in Missouri.

Well No. 1 of the current play fizzled out the first week in August for want of hole. It was J. H. Everitt's Spring 1, spudded with the aid of a bottle of champagne the afternoon of March 7, last. At about 2800 feet—roughly 200 feet short of contract depth—it was abandoned when progress no longer could be made. Following reduction of the hole by 5-3/16-inch casing, operators could not keep tools from sticking. Both acidizing and whipstocking failed. A mystery well from the first, the Everitt test has not yet released its log although interesting showings of gas and oil were reported found at a few levels. There is talk of moving in standard tools for another test of the acreage.

When lease men first swept into the

area some nine months ago they accumulated enormous acreage at $1 per lease and 25 cents per acre annual rental. To round out blocks and acquire acreage in preferred areas they now are paying $1 per acre bonus and $1 per acre rental. Bonus payments occasionally go higher.

Leasing no longer is easy. The geologically interesting Platte County is in the throes of a deadlock between major company men and landowners. Two of the most likely looking blocks there remain uncompleted because of the holdouts. This, a county in which 1 deep test and 2 shallow ones already have been drilled and abandoned, will probably be quiet in the oil play for some time to come.

Momentum undoubtedly has fallen off as the play passed through summer. Reluctance of major companies to support wildcat tests is the chief reason for the slump. Support was forthcoming for one test in Sullivan County, to Harve Elwell, the first operator to enter the play; 1 in Andrew County, to the Bradley Brothers of Wichita; 1 in Clay County, to the Eastern Drilling Company of Kansas City; and 1 in Platte County, to the Berry Brothers of Tulsa.

Majors have stated they will support certain tests when they are impressed by the geology.

Interest, because of location or depth, is centered at the moment on the Davis Brothers' Gee 1, NW NW SE 28-60-35, Andrew County, which is shut down temporarily after running 8-inch casing to 1400 feet; the Jones-Hyde Holt 1, close by in SE NW NE 34-60-35, Andrew County, which had a rainbow showing at 1330 feet and another showing of oil at its present depth of 1412 feet; and Eastern Drilling Company's Williams 1, NW NW NE 28-53-32, Clay County, which had oil showings at 477 and 536 feet and gas showings at 495 and 593 feet. It now is approaching 1500 feet.

Other Missouri wells follow:

Adair County — Mayson Oil Company's McGonigle 1, 20-63-12; drilling below 100 feet.

Bollinger County—Diemund Oil Company's Cooper 1, SE SE SE 14-29-9; drilling at 1450 feet.

Butler County—Coastal Petroleum Company and others' Pierson 1, SW NE NW 27-22-6; drilling 1637 feet.

Chariton County—Frank Buttram Petroleum Company's Vance 1, SW SW NE 35-53-18; below 750 feet.

Clay County—Ben I. Hall, shallow test in 35-52-32.

DeKalb County—George W. Moore's McQuate 1, NE SW SW 11-57-31; waiting on 6⅝-inch casing at 1500 feet.

Hickory County—J. W. Sims' Wilson 1, NW NW NW 3-37-21; 1634 feet.

Holt County—Brin and Nathan's Decker 1, C NW NW 1-61-38; drilling below 275 feet.

Jackson County—Hulse and Christopher's Wiston 1, 22-49-32; spudded.

Livingston County—Davis Brothers' Minning 1, SE SE NW 22-58-23; fishnig job at 550 feet.

Mercer County—George W. Moore's Moss 1, NW SW SE 30-65-24; drilling below 1007 feet.

Putnam County—Dittman-Clovis' Houston 1, NE 26-65-19; 800 feet.

Ray County—Turner's Craven 1, 10-52-29; spudded.

Loomis-Jordan-Wells' Macey 1, NE SW NW 10-53-27; spudded.

Schuyler County—Baldwin's Johnson 1, NE 21-65-15; 120 feet.

Shelby County—Ed Wright's Turner 1, NW NW 27-59-9; waiting on 10-inch at 612 feet.

Sullivan County—H. V. Elwell and others' Taylor 1, NW NE 12-62-21; 1014 feet.

Illinois Developments

Two wells that may extend Barnhill pool have saturation. Clay City wells report good showings in Cypress sand.

Mattoon, Ill.—Paul Mosbach et al have located C. Robben 1, SW SE 5-1n-3w, Santa Fe Township, Clinton County, in the heart of the 3½-year-old Bartelso shallow sand field, which will be taken to the Devonian lime, expected at 2500 feet, and possibly to the Trenton, at about 3300 feet. Progress of this exploration of deeper horizons will be watched closely. Deepest hole put down in Clinton County was on the Horzog farm, southwest of Carlyle, during the 1911 boom, and it was bottomed at about 2300 feet. Nels Hawley is the contractor, and cable tools will be used.

Two wells that might appreciably ex-

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HUGH ROBINSON, Blackwell, Okla. — G. A. CLARKE, Tyler, Texas
L. C. HOLLOWAY, Houston, Texas — FRED S. DEWEL, Mt. Vernon, Ill.
A. T. DONNELLY, Midland, Texas — F. B. DILLEY, Torrance, Cal.
A. V. SIMONSON, New York City

tend the Barnhill pool of Wayne County were testing. A. N. Anding's Corinne Osborne 1, NE NW 2-3s-8e, ½ mile south of production, was testing McClosky saturation, while ½ mile farther southwest Dee Brothers' (Illinois Mid-Continent) Sarah Harris 1, SE NE 3-3s-8e, was testing more than 12 feet of pay in the same formation.

Joe Miller's Foster 1, NW SW SW 11-1n-2e, 1⅛ miles east of production in the Lake Centralia-Salem pool of Marion County, was drilling at 1000 feet.

In Franklin County, Phillips Petroleum Company's Boyles 1, NE NW SE 15-5s-3e, south offset to Gulf Refining Company's E. B. Hinman 1, discovery well completed 6 weeks ago to open the Whittington pool, was drilling below 500 feet. It is being watched for possible confirmation of the strike. The discovery produced 199 barrels of oil and 7 barrels of water on its initial 24-hour test, with production from the McClosky and St. Louis. Meanwhile, Gulf has moved 1¾ miles southeast to drill the U. S. Fuel Co. 2, NW NE NE 32-5s-3e. This test was at 2118 feet at last report.

Indications that a good Cypress sand field may be present in southeastern Clay County and in the Clay City Township field were strengthened last week when Pure Oil Company's Clay City Bank A-6, in the midst of a large McClosky lime field, was completed in the higher Cypress sand for an initial pumping production of 95 barrels in 24 hours. Orchard Oil Company also announced its Norton 2, Section 7-2n-8e, had cored through 33 feet of good Cypress sand saturation. The latter well, however, was being completed in the McClosky lime.

Illinois Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Alexander County—		
George et al, Riggle 1	*	60
Clark County—		
Dunn et al, Medsker 1	*	802
Clinton County—		
Whitcher Dev. Co., Monken 1	*	1325
Fayette County—		
Carter Oil Co., Margaret Myers 1	546	1510
Kenneth Stubblefield 1	222	1577
Mary Williams 3	300	1528
Mae Durbin 1	615	1520
Mabel Mills 1	72	1554
Orville Mills 3	24	1580
Orville Mills 4	102	1571
Laura McClain 1	228	1591
Laura McClain 2	364	1589
Martha Taylor 1	460	1588
Jack Dial 2	326	1600
Coddington 5	168	1563
Richard Larimore 11-7	I	1586
Robert Matson 11-8	I	1525
Nellie Wetmore 11-5	I	1610
Richard Larimore 14-1	I	1560
E. Jones, Zanders 1A	10	1588
Haas, Sealock 1A	100	1573
Johnson Dr. Co., Arnold 1	40	1559
Phayer, Morrison 5	103	1492
Wilson et al, Barnick 1	*	1609
Marion County—		
Texas Co., Ed Tate 10	*	2019
Ed Tate 11	*	2071
E. Farthing 4	420	1795
N. Lee 15	2158	2002
J. McConnoughhay 3A	441	1821
J. McConnoughhay 5B	469	1840
Mac Roberts 5	665	1794
F. Miller 6	980	1805
W. Richardson 7	595	1749
M. I. Williams 10	560	1730
T. L. Easley 11	378	1875
E. Farthing 4B	98	1930
F. Lazaretti 210	210	1787
S. McCoy 4	252	1840
S. McCoy 5	2324	2030
S. Parker 7	147	2085
S. Parker 8	259	1866
S. Shereshoveck 4	399	1834
Shell, Farthing 8	743	1793
Baldwin Oil Co., Holmes 5	300	1875
Holmes 6	225	2059
Holmes 7	250	2060
Ohio Oil Co., Lloyd 12	300	1865
C. E. Lloyd 14	300	1864
Lloyd 16	49	2099
Lloyd 17	95	2089
Hervey et al, Kagey, Tr. 1B	265	2201
Max Pray, Robinson 1	1430	2996
Booth et al, Gross 1	*	2233
Monroe County—		
V. Netlie Oil Co. Schuler 1	40	461
Perry County—		
Stephens & Ward, Albers 1	*	830
Richland County—		
Pure Oil Co., Veit 1	116	2605
St. Clair County—		
Hempen et al, Thielman 3	35	660
Shanafelt et al, Diehl 1	*	1060
Saline County—		
Kingwood Oil Co., J. Oliver 1	*	2585
Shelby County—		
Kingwood Oil Co., Howe 1	*	2454
Tazewell County—		
Morton Oil & Gas Co., Strunk 1	*	1335
Wabash County—		
Hughes et al, Tanquary 1	*	2976
Z. D. Neff, Tr., Bump 1	286	2424
Continental, Schultz 1	244	2492
Magnolia, Meredith 1	*	3058
Buell & Hannon, Shauf 1	*	2945
Oil Exploration Co., Bosecker 1	*	2969
Washington County—		
Max Conrey, Land Bank 1	*	1296
Shell, Holston 8	102	1304
Ed Robinson et al, Brinkman 1	*	1490
Wayne County—		
Carl Robinson, Carter 1	*	3360
Morris et al, Young 1	*	1980
Prekett, Oakley 1	720	3393
New Pennsylvania Dev. Co., French 1	30	3437
White Way Oil Co., Walker 1	*	3480
White County—		
Superior Oil Co., Stum 1	*	3040
Sun, Ford 1	30	3017
Eason Oil Co., Storms 1	¶12.30	3079

*Failures; †Junked; ¶Million cu. ft. gas.
"I" indicates gas input well.

Illinois department starts enforcement of regulations requiring well permits and state-supervised plugging

With cooperation as its keynote, the Illinois Department of Mines and Minerals has started enforcement of new oil and gas legislation approved by the last legislature. The new laws, while not effecting any degree of control over the state's booming production, can be regarded as providing the groundwork for production control that operators and observers agree will eventually come.

The department, of which James McSherry is director, is charged with enforcing the state's first statute requiring a permit to drill a well—whether for oil, gas, water or another purpose. The law, while making a permit mandatory before starting operations, strangely enough gives the department no discretionary power in issuing a permit. The permit must be issued, regardless of where the operator desires to drill, if the permit application form is properly filled out.

In addition to providing a state record of wells contemplated in Illinois, the law requiring permits dovetails into a second new statute which provides for state collection of drill cuttings and filing of logs of all completed wells. In the administration of this second new act, the Illinois Geological Survey will designate areas from which drill cuttings are desired for analysis, and the operator will be directed to preserve such cuttings when his drilling permit is issued.

Director McSherry emphasized that every effort will be made to cooperate with operators in administration of the new statutes, and that while it was the duty of the department to enforce provisions of the statutes, no administrative rulings would be issued that would hinder oil development progress in the state. It is the department's intention to issue permits on the same day applications are received so that an operator may not be inconvenienced or delayed in starting a well.

While effective since July 21, when Governor Henry Horner filed the bill without his signature and thereby permitted it to become law, the Department of Mines and Minerals is not requesting applications for permit on wells started since that date; but asks now that all future operations be covered by permit. The act, which also sets forth new regulations for plugging abandoned wells, provides a penalty of $1000 for each violation and further penalties of $500 for each 10 days during which the violation continues.

Actual enforcement of the act was delayed a few weeks while the department set up the necessary machinery for issuing permits, McSherry explained. During this preparatory period, a group of major company and independent operator representatives were called into consultation for their views on the information to be required on permit application blanks. The result is a form that the department feels complies with the law but does not request information operators would be reluctant to give.

Form of Permit Application

Accordingly, the application for a permit requires the operator to state whether the well is to be drilled for oil, gas, water or "other purposes"; asks the name, number and exact location of the well and elevation of its mouth from sea level, if known. The signature of the surveyor under a statement attesting to the correctness of location information is requested, as are the names and addresses of lessor, lessee and drilling contractor. Further information asked is whether the well will be drilled with cable tools or a rotary rig, the approximate date operations will be started and probable depth of completed well or lowest geological formation to be tested. A listing of wells drilled or being drilled on the lease is also requested. A section map, subdivided, is drawn on the application for designating the exact location of the well.

The department, on the face of the permit to drill, will notify the operator "either to collect or not to collect for the geological survey drill cuttings representing each five feet of distance drilled in cable tool wells and each 10 feet of the distance drilled in rotary wells." The survey shall determine the wells on which cuttings shall be collected and, in the words of the statute, "containers for such cuttings, and information as to the approved method of collecting drill cuttings, shall be obtained from the geological survey by the person or persons responsible for the drilling of the well."

"Cores obtained by core drillings of all or of such parts of wells so drilled shall be available, in their entirety, as

recovered, to authorized representatives of the geological survey for inspection and sampling; provided that such sampling shall not involve the removal of any complete section of such core except as such removal is authorized by the person or persons controlling the well."

Within 30 days of completion of a well, or on filing notice to abandon, a log is to be filed with the geological survey, which, (1) shall show the character and depth of the formations passed through or encountered in the drilling of any such well, particularly showing the depth and thickness of oil-bearing strata, gas-bearing strata and water-bearing strata; (2) shall show the position and thickness of coal beds and deposits of mineral materials of economic value; (3) shall indicate whether it is an oil or gas well with initial production, or a water well with capacity, or a prospect test for mineral materials other than oil or gas, or a dry hole, and (4) shall give the location of the hole in accordance with the description required by the Department of Mines and Minerals in the drilling application.

Logs are to be made available by the survey to public inspection, except as to such information the operator requests be kept confidential. No information, however, shall be kept confidential for more than one year from the date of issue of the drilling permit for the well.

The Department of Mines and Minerals, from which drilling permit application forms must be filed, is located in Room 219, State House, Springfield, while the State Geological Survey, with which logs must be filed, is located at Urbana.

The statutes, as revised by the last legislature, bring up-to-date state laws on plugging abandoned wells, and require that wells be plugged with the approval of the department, with a representative of the department in attendance to supervise the work.

District Inspectors Listed

Fourteen district inspectors have been appointed by the department. They are listed for the convenience of operators, with addresses and counties in their respective jurisdiction:

First District: Steve L. Falette, 530 Ryall Avenue, Marseilles, for Bureau, Grundy, Kankakee, Kendall, LaSalle, Livingston, Marshall, Putnam and Will counties.

Second District: George H. Deemy, 511 Laura Street, Peoria, for Logan, McLean, Peoria, Stark, Tazewell and Woodford counties.

Third District: F. M. Guthrie, 347 E. Fulton Street, Farmington, for Cass, Fulton, Henry, Knox and Mason counties.

Fourth District: Harry Roberts, Edinburg, for Christian, Macon, Menard, Morgan, Sangamon and Shelby counties.

Fifth District: Thomas McKenna, 1344 N. Walnut Street, Danville, for Champaign, Clark, Coles, Cumberland, DeWitt, Douglas, Edgar, Ford, Iroquois, Moultrie, Piatt and Vermillion counties.

Sixth District: Joe Firth, Jr., Benld, for Bond, Fayette, Macoupin and Montgomery counties.

Seventh District: John B. Schmacker, 449 S. Chestnut Street, Collinsville, for Calhoun, Greene, Jersey, Madison, Pike and Scott counties.

Eighth District: David T. Stuart, 132A W. Main Street, Belleville, for Clinton, Monroe and St. Clair counties.

Ninth District: Leonard Forester, Percy, for Jackson, Perry and Randolph counties.

Tenth District: William J. Johnson, 503 S. Thomas Street, Christopher, for Franklin and Jefferson counties.

Eleventh District: Michael Taggart, 2116 Forrest Street, Eldorado, for Gallatin, Hamilton, Hardin, Pope, Saline and White counties.

Twelfth District: Fred Schoonover, Route No. 1, Carterville, for Alexander, Johnson, Massac, Pulaski, Union and Williamson counties.

Thirteenth District: Benn Pitts, Odin, for Clay, Crawford, Edwards, Effingham, Jasper, Lawrence, Marion, Richland, Wabash, Washington and Wayne counties.

Fourteenth District: Stanley B. Ingerski, Page Hotel, Macomb, for Adams, Brown, Hancock, Henderson, McDonough, Mercer, Rock Island, Schuyler and Warren counties.

Oscar Saunders, of DeQuoin, is inspector-at-large.

The district inspectors, Director McSherry declared, will make every effort to meet an operator's request for plugging supervision promptly to prevent costly delays, and suggested that an operator anticipating abandonment of a test could guard against a delay by advising his district inspector accordingly.

The new act sets forth detailed instructions on plugging abandoned wells, making it the duty of both the operator and the owner of the land on which the well is drilled to see that it is plugged properly. It provides that:

Plugging Requirements

The hole shall be solidly filled from the bottom thereof to at least 25 feet above any gas or oil-bearing formation or coal seam with a cement slurry of proper mixture. If there is a liner in such well such cement slurry should extend to at least 25 feet above such liner. After such filling with cement slurry the production striking or inner casing may then be drawn from the well and such hole filled solidly with sand, gravel, crushed rock or prepared mud to within 25 feet of the next gas or oil-bearing formation or coal seam where such cementing process shall be repeated to at least 50 feet above such gas or oil-bearing formation and coal seam. The above filling and cementing process shall be continued through all gas or oil-bearing formations and coal seams. Before any well or any producing horizon encountered therein is abandoned, the owner or operator shall use such means, methods and procedure as is necessary to prevent water from entering any oil or gas-bearing formations, and to protect any underground or surface water that is suitable for domestic or irrigation purposes from harmful infiltration and addition of deleterious substances. A cement plug shall be placed at the surface of the ground in each hole plugged, in such manner as not to interfere with soil cultivation.

If a pipe parts during an attempt to draw it and it is impossible or impracticable to fish for same, such hole shall be filled and cemented through all gas or oil-bearing formations and coal seams inside the pipe, the same as if the pipe had been removed, to within 25 feet below the place where the pipe parted. Such 25-foot space shall be filled with cement slurry. If a pipe in a well has been cemented solidly on the outside from the top of the gas or oil-bearing formation to the surface, such well shall be filled and cemented inside of the pipe in the same manner as if the pipe had been removed.

If a well has been drilled with rotary tools and abandoned and no inner pipe has been set, all gas or oil-bearing formations and coal seams shall be cemented as above set out, except that rotary mud of the proper consistency may be used for filling between cement plugs instead of sand, gravel or crushed rock. The cementing shall be either through tubing or a dump bailer.

It is the duty of the person, firm or corporation drilling a well in an area where such well penetrates an opening, room or entry of an active or inactive mine to run a string of casing, which shall be cemented at a point commencing at least 30 feet below the bottom of the opening and cemented from the top of the opening to a point at least 30 feet above the opening.

It is the duty of the operator, whenever a second string of casing for the purpose of producing oil or gas is run to cement the producing string of casing on the outside and within the inside thereof, causing a cement sheet between the two strings of casing, said cement to be placed at a point not less than 30 feet below and extending through and to a distance of not less than 30 feet above the mine opening.

If any such location is accessible through an operating mine, it is the duty of the mine operator to fully protect the well, as it passes through the mine, by a concrete column, the surface of which must be not less than 3 feet from the casing and which shall extend at least one foot below and one foot above the working face.

Indiana Fields

Try for Griffin pool extension is failure

Evansville, Ind.—Efforts to extend the Griffin pool of Gibson County 1 mile southwest failed when Fitzpatrick & Hays' F. Kleiderer 1, NE SE SW 26-3s-14w, failed to gain production in either the Cypress sand or McClosky lime. The Cypress was shaled out, and an electric log revealed no hope for McClosky production.

It was only one of several disappointments in the Griffin area last week. Burr Lambert's E. L. Kries 1, NW NE 8-3s-13w, an east outpost, was also abandoned as dry. East of the F. Kleiderer 1, W. F. Lacy's Prentice Julian 1, NE SE 26-3s-14w, was shut down after going through a dry Cypress, while Gwin Drilling Company's Julian 1, NE NE SE 26-3s-14w, an east offset to Lacy's well, also found the Cypress dry, and was deepening to the McClosky.

In Bethel Township of Posey County, 1½ miles southwest of the Julian test,

C. G. Evans & W. R. Burnett's Fanny Jolly 1, SW NE NW 3-4s-14w, topped the Ste. Genevieve at 2895 feet and, with a dry McClosky, was abandoned at 3021 feet. On the northeastern edge of the Griffin pool, Gwin Drilling Company's William Skiles 1, SE NE 18-3s-14w, was dry in the Cypress and will probably be continued to the McClosky.

Three-quarters of a mile west of the Kleiderer 1, Baldwin Oil Company and Otto J. Graham located the New Harmony Bank 1, NW 27-3s-14w. Materials were being moved in.

After being inactive for several weeks with surface casing set, Kenillind Oil Company's Ines Montgomery 1, SE SE NE 9-4s-12w, Smith Township, northeastern Posey County, a wildcat, started drilling. World Drilling Company has the contract. In the southern part of the county, Ray Ryan et al's Isaac Wolf 1, SE SW SW 30-7s-14w, Point Township, started operations. L & G Oil Company is contractor for this wildcat, being rotary drilled. Wildcat failure in this county was Gulf Refining Company's J. Pfeiffer (Blockley) 1, C N½ NW NW 13-6s-13w, Black Township. It had been plugged back to a sand at 400 feet after drilling to 2900 feet.

On acreage surrounded by The Texas Company holdings, Ralph H. Neely and J. S. Young, Jr., were moving in materials for the E. Stuffle 1, NE NE 29-4n-5w, 6 miles due north of Cannelburg, Van Buren Township, Daviess County. It will be drilled with a standard cable rig.

Dewey Ramsey's M. L. Compton 1, 1200 feet from the west line and 2700 feet from the south line, Section 12-P-34, was drilling below surface casing.

In Hancock County, Phillips Petroleum Company and Carter Oil Company's B. H. Parker 1, 2 feet from each line in the extreme NE quarter, Section 22-L-25, bailed 15 barrels of oil and 40 barrels of salt water from the McClosky. Continued efforts were being made to exhaust the water, but the outlook was unfavorable. The wildcat had been drilled to 4921 feet, and plugged back to 3030 feet. It had 6 feet of McClosky saturation below 2973 feet, and had topped the Devonian at 4529 feet.

Baldwin Oil Company's A. A. Westerfield 1, in the Utica pool of Daviess County, lost hole at 1102 feet, and moved rig 50 feet south for a new hole. Bottom was at 400 feet at last report. In this county, new wildcat start was Mecca Oil Company's Tilden Ellis 1, 1400 feet from the west line and 1800 feet from the south line, Section 9-Q-30. It set 12½-inch casing to 117 feet, 10-inch to 430 feet and was drilling below 550 feet.

Magnolia Petroleum Company, which a week ago completed Sam Green 2 in the Spottsville pool of Henderson County as a good McClosky lime well, has started Sam Green 3 with Parker Drilling Company as contractor.

L. O. Bradford's Randolph Hadden 1, 2½ miles northeast of Elkton, Todd County, reported a small flow of gas at 1535 feet. It was drilling ahead.

New York Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
Dermitt & Shaner, Swarthout farm, Bolivar	5	1330
Wilson Oil Co., Wales farm, Genesee	3	1348
Bolivar Oil Co., Mallory farm, Wirt	6	1280
Shaner & Van Curen, Reddy farm, Genesee	4	1263
H. W. Patterson, Clark farm, Scio	5	950
Clark farm, Scio	5	944
Clark farm, Scio	5	953
J. A. Bucher, Hamsher farm, Bolivar	4	1240
Sawyer & Martin, Wasson farm, Bolivar	7	1381
Walter McEnroe, Hoover farm, Bolivar	5	1394
Pure Penn. Pet. Corp., Christman farm, Bolivar	6	1367
Allegany: Water Intake Wells		
C. M. Robinson et al, Robinson farm, Scio	...	1360
Robinson farm, Scio	...	1352
Robinson farm, Scio	...	1365
Ebenezer Oil Co., Emerson farm, Scio	...	1060
Emerson farm, Scio	...	1045
Steuben County—		
New York State Nat. Gas Co., John Hollis 1	¶.12	3642
G. L. Cabot, Inc., Federal Land Bank 1	*	4180
Dora Barker 1	*	4424

*Failures; †Junked; ¶Million cu. ft. gas.

Pennsylvania Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bradford District		
D. E. Quinlan Estate, Fee	8	....
Rew Oil Co., 380-1 Bingham	2	....
George E. Slingerland, Chamberlain	2	....
Smith Newton Oil Co., Lincoln	2	....
Esther Oil Co., Inc., Lawton	2	....
T. H. Kervin, Jr., No. 5, Adams	1	....
Tapp, Gallets & Buffington, Trs., Fee	20	....
McCaffery & Krampf, McCaffery	½	....
Forest Oil Corp., 3 wells	3	....
Forest Petroleum Corp., 2 wells	2	....
Niagara Oil Corp., 3 wells	3	....
Bradford Transit Co., 10 wells	10	....
Bradford: Water Intake Wells		
R. E. Hungiville No. 2, 299-300 Bing	...	....
Forest Oil Corp.	...	....
Forest Petroleum Corp., 2 wells	...	....
Niagara Oil Corp., 5 wells	...	....
Butler-Armstrong District		
E. Z. Peffer, E. Z. Peffer	4	....
Middle District		
Weaver Trust Estate, John Lichtenberger	¶	....
George Hughes et al, William McElhattan	*	....
Dunham Oil Co., Acker	½	....
S. P. Oakes, Oakes	1	....
Middle District: Water Intake Well		
Cities Service Oil Co., Hamilton	...	....
New York-Pennsylvania: Gas Field		
Penn York Gas Corp., Cyrus Wilson No. 2	¶	....
Butler County—		
D. A. McKnight et al, F. Mahon 1	15	1778
Clarion County—		
Owens Illinois Glass Co., J. E. Reinsel 1	¶.20	2632
Fayette County—		
J. Weller et al, M. Risko 1	¶.21	1363
Greene County—		
Peoples Nat. Gas Co., F. Barger 1	¶.02	3551
C. L. Sample, J. L. Phillps 1	¶1.33	1135
Washington County—		
Moore et al, P. C. Winnett 6	¶.30	1374

*Failures; †Junked; ¶Million cu. ft. gas.

Kentucky Fields

Wildcat starts put Hancock County ahead in new work

Owensboro, Ky.—Ray Beard et al's Jess Barnett 1, 100 feet from the north line and 600 feet from the east line, Section 9-P-34, had only a show of oil in the Bethel and was abandoned. The wildcat topped the formation at 492 feet, had a show from 492 to 517 feet, and plugged at total depth of 724 feet.

Lion Oil & Refining Company last week extended its drilling program to Kentucky, starting its first wildcat test in Hancock County where a block of 963 acres have been assembled. Its O. E. Gabbert 1, 1700 feet from the east line and 1900 feet from the north line, Section 13-Q-32, was drilling below surface casing at last report. The company also has assembled 870 acres in Daviess County, and will take at least one wildcat test to the McClosky horizon in that county.

Three other wildcat starts were reported from Hancock County, putting this county well into the lead for the week's schedule of new work. W. J. Flesher's Cal Young 2, 1500 feet from the north line and 2400 feet from the east line, Section 1-P-33, topped the Ste. Genevieve at 763 feet, set 8-inch casing to 765 feet, reported an oil show between 878 and 884 feet, and at last report was drilling on at 1000 feet. Mohawk Drilling Company's Hancock Land & Improvement Co. 1, 200 feet from the north line and 2400 feet from the east line, Section 20-P-34, was being drilled with a core machine, and

Kentucky Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Daviess County—		
Major Oil Co., Hansford 1	200	1700
Globe Oil Co., Clark 9	20	1167
Knott County—		
Warfield Nat. Gas Co., Clark et al 4837	¶.40	2136
R. H. Amburgh et al 4838	¶.32	3248
Inland Gas Corp., Pigman 210	¶.18	2879
Ohio County—		
J. C. Ellis, Feemster & Wimsatt 10	10	527
Powell County—		
A. Eaurinson, Woreman 8	25	810
J. P. Perry, Faulkner 1	15	800
Evans Oil & Gas Co., Creeck 1	*	800

*Failures; †Junked; ¶Million cu. ft. gas.

West Virginia Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Cabel County—		
United Fuel Gas Co., Adkins 4882	¶.21	3917
E. A. Childers 4846	¶.15	3711
Calhoun County—		
McCall Dr. Co., Bennett 3	¶.22	2110
Doddridge County—		
Coffman O&G Co., Smith 2	3	2668
Gilmer County—		
Riddle O&G Co., Riddle 2	¶.36	2137
Hancock County—		
Carl E. Hahn, Crago 2	*	510
Kanawha County—		
Mullins Gas Co., Carney	¶5.98	5014
Pure, Slaughters Creek 10	¶.43	1900
Lincoln County—		
Guyan Gas Co., Russell Heirs	¶.24	3646
Dry Fork O&G Co., Adkins	¶.16	3672
Marion County—		
First Exchange Bank, A. Holbert 1	¶.20	2980
Monongalia County—		
Consolidated Oil & Gas Co., N. A. Moore 1	1	1949
Putnam County—		
Reishman O&G Co., Oxley 1	¶.37	4379
Teavee O&G Co., Erwin 1	¶.55	1074
Ritchie County—		
Pittsburgh O&G Co., Wince 1	*	1731
T. F. Moats & G. C. Barker, Fowler	*	1990
Roane County—		
W. Va. Gas Corp., Kaufman 1	¶.10	1834
Clendenin Gas Co., Fields 1	*	1595

*Failures; †Junked; ¶Million cu. ft. gas.

Ohio Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Athens County—		
G. & K. O&G Co., F. Ogg 2	10	512
Gibson & Kuntz, Weis Van Dyke 2	¶.17	724
H. Stout, Ruth 1	¶.01	327
Townsend, Kelley 2	¶.06	1703
Guernsey County—		
M. J. Purdy, Hall 1	¶.07	1505
Knox County—		
Norwood Oil Co., Stainer 1	30	3136
Licking County—		
Patten et al, Wright 4	3	756
Ohio Fuel Gas Co., Benner 1	¶7.00	2567
Medina County—		
Ohio Fuel Gas Co., Ackerman 1	¶1.63	2650
Stark County—		
Lyons et al, Stark Land Co. 1	¶.80	4567
Washington County—		
Dixon et al, Cullen 2	¶.06	1980
Henning et al, M. Cullen 2	40	1400

*Failures; †Junked; ¶Million cu. ft. gas.

West Texas Fields

Cedar Lake wildcat moving Permian production to east. Cochran County deep wildcat showing favorable structure.

Midland, Texas. — Production test given the wildcat on the Cedar Lake structure, northeastern Gaines County, heralds the opening of an oil pool that may mark a new trend for the upper portion of the Permian Basin sector of West Texas. The indicated strike is Stanolind Oil & Gas Company's Rayner 1, C SW PSL Section 3, Block C-30, which yielded 1100 feet of oil and drilling fluid when formation tester was used at 4651-4700 feet. This showing was not considered adequate to warrant running tubing to try for a flowing completion. The test was coring at 4730 feet, according to late reports and probably will be carried 200 feet deeper in order to explore the pay section.

The Cedar Lake prospect is 26 miles northeast of the Seminole field, nearest production, and is 33 miles east by south of the Wasson district. It is due to become the most easterly producing area for the region.

Completion of an oil well was generally anticipated after Rayner 1 logged top of Yates at 2700 feet and top of Brown lime at 3750 feet, with an elevation of 3066 feet, giving it unusual structural relief when correlated with a 5129-foot failure 5 miles to the west and an abandoned pumper, located 4½ miles northeast in Dawson County. The presence of high-pressure gas in the Yates and at intervals above the Big lime added to the favorable outlook.

Humble Oil & Refining Company's Westheimer - Daube 1, northwestern Cochran County projected 9500-foot wildcat, registered favorable structural position in logging first anhydrite at 2015 feet, and top of salt at 2105 feet, with an elevation of 3862 feet. On the first marker it is 78 feet higher than Helmerich & Payne's Westheimer-Daube 1, located 4 miles to the southwest. The latter quit at 5205 feet without reaching water in the Big lime. The scheduled deep test is 70 feet lower on anhydrite than Jim Whittington's McElvey 1, southwestern Bailey County wildcat that recorded high structural position on all markers in drilling to 4608 feet.

Volume of oil completions in the district is due to decline sharply as result of the enforced production holiday. Fields and pools that have been exempt from the shutdown order have comparatively little development underway. The most active drilling centers are dependent upon gas from oil wells to supply fuel for about 50 percent of the rotary rigs. Inability to clear lease tankage will also cause pending completions to be deferred.

Majority of the pipe lines servicing the district are slated to remain near normal load throughout most of the holiday, as crude stocks on hand at the close of June amounted to 7,406,000 barrels. Companies that have a surplus are negotiating to sell or exchange oil with those that are faced with a shortage. Old stocks of crude that are badly weathered will be withdrawn by some of the carriers.

The Wasson-Bennett district, which is staging a large-scale development program, will be relieved of pipe line proration shortly after the scheduled production holiday ends, as Shell Pipe Line Corporation resumed construction work on its 6-inch carrier to Hobbs early last week. Additional welding crews are due to complete two miles of line daily.

Minor east extension for the Wasson field was made by Magnolia Petroleum Company's Kendrick 3, NE NW NE Section 868, for a rated potential of 732 barrels of 34-gravity oil. Broken pay at 5000-5129 feet was acidized with 5000 gallons.

Lone Star Gasoline Company's Page-Shell 1, offsetting production, gave the Page pool, Schleicher County, its third gas-distillate producer in testing 8,000,000 feet daily after using 5000 gallons of acid at 5541-49 feet. Previous acid treatments at a lower level in the lime failed to yield commercial gas. The big gas flow was attained several days prior to lease expiration date. This completion terminates the company's three-well program launched to develop sweet gas to supply Lone Star Gas Company's system at San Angelo. One test was a failure and the second made a small oil well, which will revert to Humble Oil & Refining Company in accordance with sublease terms.

West Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Ector County (Foster)—		
M.B.K. Drl. Co., Gist 2-A, sec 9	1564	4316
Schermerhorn Oil Corp., Johnson-Amerada 1-C	452	4400
Stanolind, Cowden 19-A	602	4200
Cowden 19-B, sec 14	1351	4190
Johnson 9	283	4225
York-Harper & Sloan-Zook Co., Foster 2-C	1748	4333
Ector County (Goldsmith)—		
Eastland Oil Co., Cummins 2	1292	4206
Humble, Scharbauer 22-C	184	4240
Ector County (North Cowden)—		
Llano Oil Co., Holt 4	940	4255
Stanolind, Cowden 76	1271	4367
Gaines County (Wasson)—		
Continental, Moore 3-45	817	5057
Tom Green County (Wildcat)—		
D. Elder, Nolen & Adkins, De-Long 1	*	555
Hockley County (Slaughter)—		
Honolulu Oil Corp., Mallet 1-10	160	5049
Western States Gasoline Corp., Coons-Humble 2	1263	5029
Howard County—		
Shasta Oil Co., Texas L&M Co. 8	1584	2830
Jones County—		
Bradford & Robertson, Copeland 1	510	3275
Evans et al, Crier 1	*	1721
Ungren-Frazier et al, Cox-Hamilton 3	4748	3267
Pecos County (Payton)—		
Pecos State Oil Co., Pecos River 11	88	2085
Pecos County (Pecos Valley)—		
Mid-Continent, Jasper 8	268	1642
Ward-Pecos Pet. Corp., Pecos Valley 3-C	6	1634
Wesley O&G Co., Francis-Lewis 5	60	1883
Pecos County (Tobarg)—		
Cardinal, Tippett-Kirby 52-E	300	415
Marvin-Henderson Oil Co., Trippett-Conoco 9	13	412
Pecos County (White-Baker)—		
Cardinal Oil Co., White-Baker 3-B	125	1718
Pecos County (Yates)—		
Ohio, Yates 16-H	7558	1838
Pecos County (Wildcat)—		
Williams et al, H. J. Eaton 1	*	3062
Upton County (McCamey)—		
T.P. Coal & Oil Co., Lane 37-A	291	2109
Ward County—		
Gulf, Hutchings 124	889	3080
Hutchings 127	1018	2778
W. P. Luse & Ice, Blair 11	143	2095
Winkler County (Hendrick)—		
Stanolind-Westbrook-Thompson, Hendrick 4-E-T-89	59	3025
Yoakum County (Bennett)—		
Aloco Oil Co., Bennett-Texaco 1-B	200	5260
Mid-Continent, Comer 1	2132	5205
Yoakum County (Wasson)—		
F. M. Allison Prod. Co., Edens 2	1181	5137
Aloco, Hovencamp-Texaco 1	1540	5146
Basin States Oil Co., Hague-Honolulu 1	1133	5186
Magnolia, Kendrick 3, sec 868	712	5129
Oil Development Co. (Texas), Willard-Fee 1-803	968	5269
Tide Water Associated, Kendrick 2-B	1269	5128

*Failures; †Junked; ¶Million cu. ft. gas.

West Central Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Brown County—		
Selvidge et al, Fee 7-A	¶1/3	1144
Brown County (Wildcat)—		
Hartzel et al, Browning 1	*	815
Callahan County—		
Warrent et al, Williams 2	7	606
West et al, Boatright 1	*	802
Shackelford County—		
Algord Oil Co., Swenson 2	377	3206
J. G. Hammond, McKeever 2	2480	3213
Hart et al, Clausell 1-A	*	966
Owens-Snebold Oil Corp., J. S. McKeever 3	2252	3196
Valley Osage Oil Co., McKeever-Texaco 1	1104	3187
Stephens County (Wildcat)—		
Lone Star, O'Connor 1, sec 51	*	4241

*Failures; †Junked; ¶Million cu. ft. gas.

Texas permits total 177 during week

The Texas Railroad Commission last week approved permits for drilling 177 new wells in Texas, 7 less than were allowed the week before.

Seven permits were granted in the East Texas field, including 4 in Rusk and 3 in Gregg County. From the remainder of the East Central Texas area 5 locations were reported.

West Texas operators reported 38 locations, including 15 in Yoakum County, while West Central Texas producers listed 22 locations. The commission approved permits for drilling 16 new wells in the Gulf Coast District and Southwest Texas operators were permitted to drill 51 new wells with 11 in San Patricio County.

There were 29 locations approved in the North Texas area including 12 in Archer and 10 in Wichita County. Nine permits were allowed to operators in the Panhandle.

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
Hagy-Harrington & Marsh, Grimes 1	¶4.1	3025
Texas Co., T. J. Boney 10	281	3052
Cooper 7, sec 6	264	3180
Gray County—		
Continental, Benton 5	656	3218
Crenshaw et al, Benton 5	743	3161
Hagy-Harrington-Marsh, Benedict 2	¶20.8	2814
Phillips, Benton 2	280	3191
Texas Co., Williams 21, sec 6	2113	2790
Hutchinson County—		
Huber Pet. Co., Weatherby 5	362	3045
Kewanee Oil Co., Lewis 38	270	3033
Phillips, Perkins 22	246	2990
Moore County (Wildcat)—		
Shamrock O&G Corp., Crabb 1	*	3782
Wheeler County—		
Dunaway et al, J. A. Worley 3	20	2350

*Failures; †Junked; ¶Million cu. ft. gas.

North Texas Fields

Western Clay County wildcat being completed as oil well. K-M-A well completions held up during oil holiday.

Wichita Falls.—Western Clay County has a wildcat oil producer in process of completion from the Strawn horizon, making the third strike for this section of the county since the first of the year. Frabor-Hodges Corporation, Sinclair Prairie Oil Company et al's Kinder 1, NEc Lot 11, Block 2, Clark & Plumb Survey, 4.6 miles east of the Burns 2-well pool, swabbed 5 barrels of fluid hourly, averaging 60 percent 38-gravity oil, after 60-quart nitro shot at 4130-52 feet. Hole was plugged back by stages to 4160 feet before attaining water shutoff. The oil zone was topped at 4133 feet. Water was encountered in the lower Strawn, and also in the Caddo at 5445-5527 feet.

Bridwell Oil Company's Halsell 1-B, previously reported as flowing natural from lower Strawn at 4749-86 feet to become the second well for the Halsell pool, Clay County, gauged 114 barrels of 40-gravity oil through ½-inch tubing choke on 3-hour test for completion. Casing pressure dropped from 775 to 400 pounds, while pressure on tubing receded from 675 to 150 pounds during the official gauge.

Two wildcat failures for Clay County were listed the past week. Consolidated Oil Company et al's Bevering-Foster 1, BBB&C, Section 9, A-69, found the Strawn section barren of production, and quit in Ellenberger at 3042-90 feet. It is in the northwest portion of the county. Youngblood-Foree and Ramsey Petroleum Corporation's Wynn 1, G. Gowan Section 2, A-795, was awaiting plugging orders at 5359 feet.

Two Canyon lime projects in southeastern Baylor County were ordered plugged. British-American Oil Producing Company's Green 1-B, C NE NW T&NO Section 219, ¾ mile southeast of its Seymour pool discovery pumper, missed the 2600-foot Canyon saturation, and halted operations at 3400 feet. This is the third failure drilled by the company on its large lease block. Green 1-C, ¾ mile northeast of the original producer, pumped 151 barrels initial after using acid at 2612-21 feet. Consolidated Oil Company's Green 1, C NE T&NO Section 230, 3 miles southeast of the Seymour pool, also proved dry in the Canyon, and was abandoned at 3225 feet.

Preliminery production test given British-American Oil Producing Company's J. R. Parkey 1, SWc H&TC Section 11, Block 3, north offset to its Mankins pool deep lime pool discovery in western Archer County, estimated the oil yield at 5 barrels hourly. Production is from Caddo lime at 4653-69 feet, or 8 feet higher on structure than the completed well.

Exemption given stripper well production by the Texas Railroad Commission in the North Texas district leaves such flush fields as K-M-A, Hull & Silk, Holliday-Canyon, Walnut Bend, James and a few smaller pools to observe the 15-day production holiday. K-M-A field, the district's most active drilling center, called a halt on completing wells until pipe line runs are available.

Expansion of the Archer County section of the K-M-A field to the southwest as previously indicated by Magnolia Petroleum Company's Minnie Thom 1, SEc of 240-acre lease, W. H. Spillers Survey, A-375, developed a questionable outlook when this outpost encountered salt water at 3862-63 feet. It establishes an abnormally high water level. The hole was plugged back to 3861 feet for 80-quart nitro shot at 3840-60 feet. Production test has been deferred to remove cavings. It was considered a safe bet for a normal pay section when top of lime was logged at 3714 feet.

Low structural position is credited to Youngblood and Foree's Davis 1, prospective fourth oil producer for the Nocona deep pool, Montague County, in logging broken Strawn pay at 4659-77 feet. String of 5½-inch pipe was cemented at 4672 feet, and the hole will be deepened with machine. Davis 1 is on a 6-acre lease, and is about ¼ mile northeast of production. Drill-stem test in upper Strawn at 4315-45 feet yielded a good show of oil. Rogers & Rogers' Burnett 2, 830 feet southeast of their discovery, filled drill pipe with 850 feet of oil and 120 feet of mud and salt water when tester was used on broken sand at 3341-50 feet. Later drill-stem test at 3812-34 feet yielded little oil with salt water. Drilling was resumed to try for a completion in the 4600-foot pay.

Two prospective Simpson horizon wells in the Walnut Bend pool, Cooke County, did not make favorable showings in the past week. Sinclair Prairie Oil Company's McGeorge 1, NWc Lot 1, Section 7, has plugged back to 5410 feet after yielding salt water with small amount of oil in Simpson section at 5254-5438 feet. The company's Best 10 and 12 made small wells in this lower zone, but may be plugged back to the 4900-foot Strawn. Ed. Cox and Jake Hamon's K. Neu-Texaco 3-B was making swabbing test of Simpson at 5204-5378 feet with little oil showing, according to reports.

Pumping test given Consolidated Oil Company and B. E. Hepler's W. T. Waggoner 1-CC, southeastern Wilbar-

North Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County—		
Young & Bernhard, Marrison 2, sec 2403	18	1297
Archer County (K-M-A)—		
Hammon-Hanlon & Buchanan, Ferguson 5-B, blk 14	560	3927
H. A. Schaeffer Oil Co., Ferguson 5-A, blk 15	488	3870
Clay County (Halsell)—		
Bridwell Oil Co., Halsell 1-B	912	4786
Clay County—		
Norwood et al, Duncan 7, blk 15	*	1228
Clay County (Wildcat)—		
Costley et al, Taylor 1-B, blk 41	*	1406
Cooke County (Walnut Bend)—		
Cox & Hamon, K. Neu-Texaco 2-B	704	5395
Sinclair Prairie, Best 12	603	5474
Cooke County (Wildcat)—		
Pois & Schulz et al, Felker 1	*	1756
Jack County (Wildcat)—		
Holbrook & Woods, McDonald 1, sec 1	*	475
Wichita County (K-M-A)—		
E. C. Oil Co., Mangold 14, blk 34	1440	3821
Hamilton et al, Martin 3-D, sec 36	832	3858
Hanlon & Buchanan, Fassett-Tuttle 12-B	582	4010
Harwell et al, Hodges 1	256	3925
Kadane & Sons, Miller 1	792	3859
McCutchin et al, Denny 7	202	3928
Shell, Kempner 1-B, blk 42	580	3908
Sinclair Prairie, Martin 3	904	3850
Wichita County—		
Magnolia, H. Reilly 152	81	1426
Perkins & Cullum, Burnett 18-A, sec 1	15	671
Wichita County (Wildcat)—		
Bridwell Oil Co., Willis 1-B	*	1600

*Failures; †Junked; ¶Million cu. ft. gas.

East Texas Fields

Trinity production objective of three wildcat operations

Tyler.—Revival of wildcat drilling to the Trinity horizon is evident in the Woodbine belt. Three projects are underway or scheduled for the fault trend, while a deep test has been authorized for the basin sector in southern Smith County. The Woodbine zone has offered little encouragement to its faithful followers in recent years except for small pools and deep gas-distillate strikes. The Trinity has been given comparatively few tests and is due to attract more attention in the future.

The Texas Company has awarded contract for the drilling of a 6500-foot test on its large block in Smith County between Bullard and Flint. Location is in the northwest portion of the Scritchfield 50-acre tract, Davis Page Survey.

Hunt County section of the Mexia-Talco fault trend gained a deep project when Westmount Oil Company's A. J. Stevens 1, M. L. Terry Survey, mile west of Celeste, spudded early last week.

Separate fault trends in Limestone County are to be explored for Trinity production by two previously announced tests. Murray Samuel et al's Barrol 1, W. G. McKenzie Survey, 4 miles southwest of Goose Creek has awarded contract for the drilling of a 6000-foot test on a 5000-acre block to try for production in the Glen Rose and Travis Peak. Peyton Bros. et al have a similar objective in the scheduled drilling of Harris 1, located on the west edge of the Mexia field. Derricks have been erected for both tests.

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
McMahon et al, Finney 6 (22-ac)	3500	3682
Overton Ref. Co., London School Lot 5	1500	3760
Kilgore Area—		
Potter Bros. Prod. Co., O. Daniels 3, blk 135	400	3570
Longview Area—		
Humble, Clemens 13 (75.2-ac)	3600	3635
Magnolia, Allen 11 (34.41-ac)	7000	3650
Stewart Oil Co., Killingsworth 3 (68.9-ac)	480	3617
Angelina County—		
Ginter-Jones Co., Copes Hrs 6	2	2190
Kaufman County (Wildcats)—		
Knoerr et al, J. P. Hunter 1	*	3006
McGee et al, Gen'l American Life 1	*	3093

*Failures; †Junked; ¶Million cu. ft. gas.

ger County wildcat that has been in process of completion for several weeks, credited the well with yielding 250 barrels of oil and 25 barrels of water. Production is from Strawn at 3985-4065 feet, with top of lime called at 3763 feet. It is 3½ miles northwest of nearest K-M-A deep production, and is considered to be on a separate geological feature. More development is to be undertaken by the owners.

Second well in Coleman area has oil in hole

Coleman, Texas.—Anzac Oil Corporation's J. P. Morris 5-C, northwest offset to the company's discovery producer on the David Breeding Survey No. 728, Coleman County, developed hole full of oil, and flows by heads when agitated after drilling Strawn pay at 2174-93 feet. It is 1 foot lower than the pool opener, which made 228 barrels of pipe-line oil in 2 hours and 25 minutes after light nitro shot. The second test was due to be shot late last week.

Resumption of development of the Goldsboro deep lime field, northwestern Coleman County, is to follow the purchase of the original Centennial Oil & Gas Company's holdings by North South Oil Company, headed by Oscar Cooper, New York City. Republic National Bank, Dallas, has operated the properties, consisting of 6 wells in the 3800-foot Strawn, since the discovery company became involved in receivership. Cooper and associates' J. P. McCord 1, San Augustine Survey, was scheduled to test late last week after cementing pipe on pay at 3858-59 feet.

Sale of Atlas pipe line and plant ordered

Pursuant to an order given August 17 by Federal Judge Ben C. Dawkins at Shreveport, the entire properties of the Atlas Pipeline Corporation, including its refinery at Shreveport, office building at Shreveport, and all of its other properties, including pipe lines from East Texas to Shreveport and South Arkansas, will be sold at Shreveport on next September 19. The sale will be made by H. K. Phelps, Jr., receiver for the company, named last May. The company has been continued as a going concern under the receivership.

The order provides that no bid for less than $1,200,000 will be considered. The sale was ordered in the suit of the First Trust Company of Philadelphia, Pennsylvania, against the Atlas Pipeline Corporation. The trust company represents the first mortgage holders.

Plug back for test

Beeville.—Passing 3010 feet, Sal Vieja Oil Corporation et al's Jesse G. Riser was nearing its contract depth and is to be plugged back for another test at 2126-48 feet. The well found a Jackson sand at this level showing oil and several attempts to complete as a commercial producer failed.

If successful, this well will open a new pool about 15 miles southwest of George West. It is in the A. Moore Survey, near the McMullen County line and on a Shell Oil Company farmout.

Southwest Texas Fields

Gauges being made on four field openers in Coastal area. New field opening in Webb County and another in Valley.

Corpus Christi. — Final gauges were being taken in four new field discoveries along the South Texas Gulf Coast. All were opening high gas/oil ratio or distillate areas. Unless these wells lead to the development of stable crude production, none of these areas is expected to become important from a drilling point of view.

Flowing about 30 barrels of 51-gravity distillate per day through ⅛-inch choke, Moore & Ahern and Cron & Gracey's Brushell 1 has opened the Texana field in Jackson County. The well was flowing under pressures of 2050 pounds on tubing and 2350 pounds on casing with the gas/fluid ratio above 100,000 to one. The well is producing from perforations at 5505-8 feet in a Frio sand section. The area is well divided but holdings are considered sufficiently consolidated that it may lead to the construction of a condensate and recycling plant. No new locations have been announced or other development officially reported.

Jackson County's key development at this time is the Vanderbilt-West Ranch area. The two pools are considered to have been definitely merged by Humble Oil & Refining Company's State 1-B in Menefee lake. It cored oil sand in the West discovery zone at 5120-28 feet, then encountered a sand section at 5500-94 feet, much of which had shale, but showed oil. This corresponds to the Vanderbilt discovery zone. The test was drilling deeper. Recently, Lonnie Glasscock extended West Ranch two miles to the north to near the Vanderbilt area. Humble Oil & Refining Company's well apparently completes the series of extensions to merge to the two pools. This would indicate that the discovery well and only producer in the Vanderbilt pool is the northernmost limit to the entire area.

The efforts of John Mayo et al to open a new pool south of the Victoria townsite in Victoria County are meeting with success, but well appears to be a gasser spraying oil. On latest tests, it is making mostly gas and spraying some fluid through small choke. Pressures are equalized at 1050 pounds. The well is Vogt 1, in the Victoria town grant, and is producing from perforations at 2552-55 feet. Miocene sand was logged at 2545-55 feet.

Gas/oil ratio has been materially lowered in Shield Oil Company's Potter 1, discovery well of the Robstown pool of Nueces County. The well is now flowing at the rate of 48 barrels of 44.6-gravity crude per day through 5/64-inch choke with 950 pounds tubing and 650 pounds casing pressure. Perforations had been made at 5560-66 feet, a squeeze job at approximately the same level apparently overcoming the channeling of the gas.

Wellington Oil Company's Richardson 3, having been carried to 7032 feet, has been plugged back to test in a sand at 6565-95 feet, where it showed for a producer. It is the southernmost well in the South Clara Driscoll field of Nueces County and is the second to be completed in this sand. A third well in the same zone and a one half mile northeast extension were being provided by the same company in L. M. Dugger 9. It had the sand at 6487-6514 feet. First perforations at 6510-14 feet were squeezed and completion was being effected through perforations at 6487-97 feet.

W. R. Quin et al's Pundt 1, which has opened a new field on the Wade City prospect in Jim Wells County, is flowing 20 barrels of high-gravity oil per day through 7/64-inch choke under pressures of 1475 pounds on tubing and 1600 pounds on casing. It is producing from perforations at 4809-13 feet. The well should lead to further exploration.

Magnolia Petroleum Company failed to find commercial production in D. O. Maun 1, one mile west of the LaGloria field in Jim Wells County, and is drilling deeper. It showed oil, gas and salt water on a series of production tests through perforations at 6798-6806 feet and holes were squeezed. The well had been bottomed at 6811 feet, but is now below 6850 feet, apparently headed for at least 7500 feet.

Another gas-distillate area being opened in Valley

McAllen.—Rio Grande Valley was adding another Vicksburg sand distillate field late this week with Magnolia Petroleum Company's Fee-Guerra 2. The well was cleaning into the pits making gas, wash water and distillate through small choke. No gauge was available, but it appeared to be making a large gas producer with a fair volume of fluid.

The test is located 19,500 feet southwest of the main LaReforma field, producing from the basal Frio. It is believed to be on a separate structure on the main LaReforma anticline.

This discovery is bottomed at 6566 feet, but has been plugged back to 5911 feet and casing perforated at 5810-58 feet with 20 shots. On a series of drill-stem tests, made while the well was being drilled, the zone showed high volume of gas and considerable distillate.

New shallow Mirando field looms in Webb County

Laredo. — A new shallow Mirando sand oil field appeared to be in the making late in the week with H. K. Boysey and Brian Jones attempting to complete G. W. Watkins 4. The well was bottomed at 790 feet with sand logged 777-85 feet. At last reports, the hole was being swabbed and mud, gas and some oil were being recovered.

The potential discovery, fourth in the immediate area by this company, is located in the extreme northeastern por-

tion of Webb County. The test is 1570 feet from the south line and 2970 feet from the east line of Section 11, San Casimero Grant.

An effort to extend the Volpe field of this county failed with the abandonment of Harvey & Henderson's Benavides 3, which was stopped at 2482 feet. It cored a sand section in the Mirando zone at 2468-82 feet, but several drill-stem tests failed to indicate commercial production. The test is a half mile north of the several producers owned by Magnolia Petroleum Company.

In the Bruni area, Tide Water Associated Oil Company had progressed to below 4500 feet in A. M. Bruni 7. This is the first deep Sparta-Wilcox operation in the Mirando district and is projected to 9200 feet. In the Carolina-Texas field, several miles to the northwest, preparations were being made to drill a 5500-foot Queen City sand test. It is Carolina-Texas Oil Company's R. O. Barnsley et al 12, and is to be located in the center of the east half of Block 11, Section 268. It is near the southern portion of the field and some distance from another 5500-foot test which made distillate from the same sand.

A second producer for the new Chiltipin field in northeastern Duval County was near completion with Hawkins & Howell Drilling Company finishing Garcia 1 in the Pettus sand. No gauge was available, but the well was reported to be flowing oil with a high gas ratio. The well logged the sand section at 4773-4816 feet and is bottomed at 4860 feet. Perforations had been made at 4781-84 feet.

Edwin M. Jones' wildcat southwest of the South Calliham field in McMullen County is a 20-barrel-per-day low-gravity producer. Casing had been perforated at 1056-60 feet, sand being logged at 1050-59 feet. The north offset is a producer in the same sand, while the south offset, drilled by Harry Ezzell, was abandoned at 1111 feet. The discovery is Jones' Ezzell 96, located in the southwest corner of Section 4.

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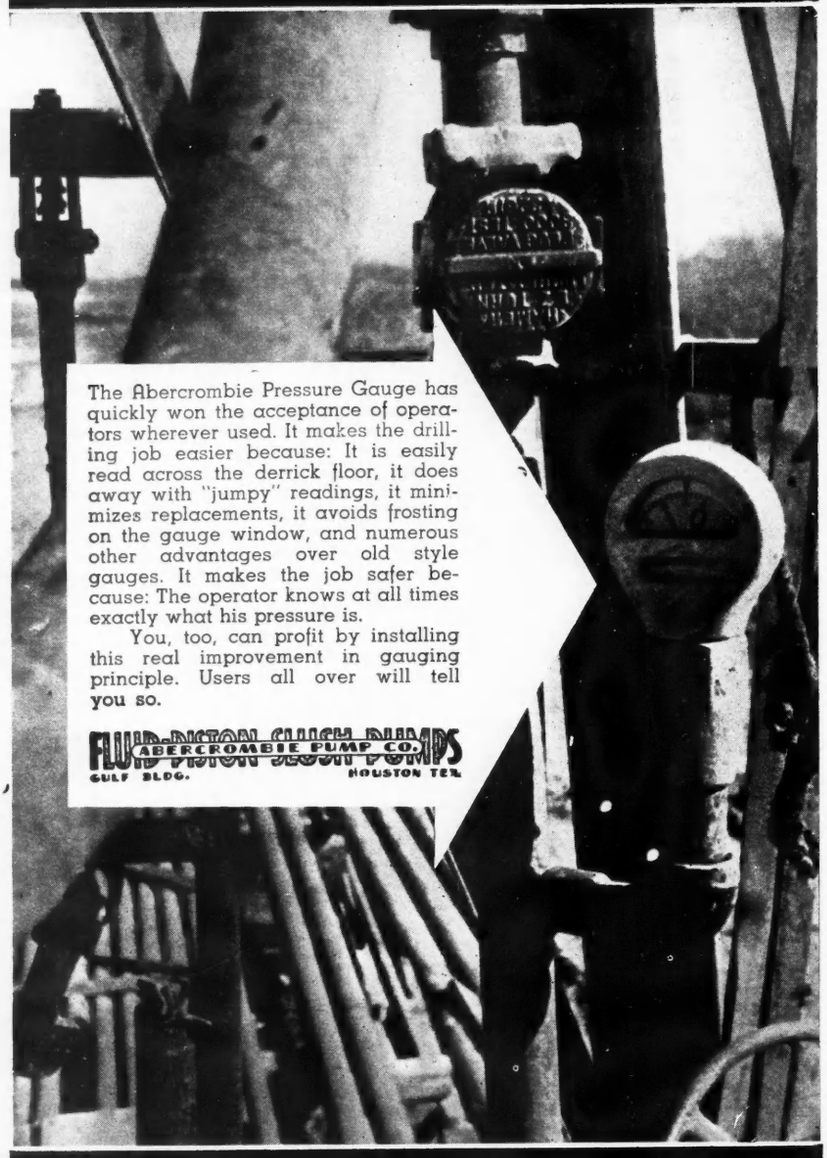
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Eighth failure completed in Batesville area

San Antonio. — Wilcox Oil & Gas Company chalked up its eighth failure in the Batesville sector centering around the common corners of Zavala, Medina, Uvalde and Frio counties. The company, however, has commenced another well to be carried to the Edwards limestone.

This district was brought into prominence two years ago when a crevice well in the Georgetown flowed at the rate of 210 barrels of oil per hour through open casing. Four other wells were drilled in the immediate vicinity, the last being abandoned last week at 3995 feet, having topped the Edwards limestone at 3950 feet. The discovery also has been abandoned after making too much water.

One well was drilled in Uvalde County, one in Frio County and still another in Zavala County, all unsuccessful in the Edwards limestone. The newest operation is 3½ miles northeast of the discovery and is W. D. Kincaid 1, in the southeast corner of Survey 374½.

Adams & Lyles failed in their attempt to widen production in the Riddle field of Bastrop County. Just across the line into Caldwell County, S. S. Campbell 1, G. Pace Survey, was abandoned at 1801 feet after pumping only a small amount of oil. The well showed some oil in the Dale lime, chalk and serpentine, but after acid treatment failed to give up the fluid commercially. The well has been plugged.

South Texas Completions

SAN ANTONIO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Atascosa County—		
Pulliam & Dickson, Henke 2 (WC), A. S. Donavan sur 145	*	662
Bastrop County—		
Marts & Beavens, Woods 1 (WC), Dennis Dykes sur.	*	3265
Bexar County—		
J. H. Liles, Liles 1 (La Coste), J. F. Pickens sur 7	5	1206
Caldwell County—		
Adams & Lyles, Campbell 1 (WC), Riddle area	*	1801
Edwards County—		
Reynolds, Turney 1 (WC), sec 164	10	416
Guadalupe County—		
Bluhawk, Fee 1 (Darsh Creek)	261	2579
Kendall County—		
Crist & White, Schoenewolf 1 (WC), F. Wilson sur 2	*	150
Dewey, Seidensticker 2 (WC), R. Davis sur 20	*	726
Lee County—		
Panos, Sanders 1 (WC), J. Von Roeder sur	*	4627
Medina County—		
Mitchell, Haby 1 (Dunlay)	1½	595

Company, Well and Location	Init. Prod. Bbls.	Depth
Schleicher County—		
Lone Star, Shell-Page 1 (WC), Cooper Page area	¶15	5723
Travis County—		
Floyd, Glass 1 (WC), J. Gilliland sur	*	1025
Richardson, Perry 1 (WC), A. C. Caldwell sur	*	930
Williamson County—		
Caffey, Seggern 1 (WC), Hardy Pace sur	*	1130
Wolters & Roser, Nelson 1 (WC), T. Toby sur	*	1190
Zavala County—		
Wilcox, Gilliam 1, Hardy Pace sur	*	3995
CORPUS CHRISTI DISTRICT		
Brooks County—		
Humble, McGill 17 (Kelsey)	250	4728
Hidalgo County—		
Brinkoeter, George 3 (Samfordyce)	*	2873
Jackson County—		
Glasscock, Drummond 4 (Vanderbilt-West Ranch)	650	5625
Humble, Toney 1 (Vanderbilt-West Ranch)	600	5515
Magnolia, West A-14 (West Ranch)	850	5108
Moore & Ahern and Cron & Gracey, Drushel 1 (WC), Texana area	¶10-50	7008
Porter, Drushel 4-A (Cordelle)	250	2751
Richardson, Drushel 1 (Cordelle)	300	2748
Jim Wells County—		
Graham & Mosser, Mosser 2-A (Reynolds)	400	5175
Mosser 3-A	400	5183
Hunter & Quin, Pundt 1 (WC), Wade City area	¶4 & 40	5411
Morgan, Fee 3-F (Reynolds)	250	5164
Smith & Story, Inc., Rowena Shaffer 1 (WCO), Armagosa area	*	2354
Texas Gulf, Miller 3-A (1-F) (Reynolds)	350	5172
Lavaca County—		
Goldston, Turk 1 (WC), G. W. Edwards sur	*	8507
Nueces County—		
Agua Dulce, Purl 4 (Agua Dulce)	¶10 & 100	4820
Lockhart, Winfield 2 (Agua Dulce)	¶10 & 100	4791
Phillips, McCright 3 (Clara Driscoll)	¶20	7459
Shield, Potter 1 (WC), Bobstown area	75	7089
Stanolind, McCann 15 (Luby)	325	5059
Texas Conservative, Bock 1-D (1-B) (Minnie Bock)	350	3822
Union, Sponberg 2 (Agua Dulce)	¶10 & 100	4862
Refugio County—		
Coronado, Michna 4 (La Rosa)	500	5910
Rooke 31 (La Rosa)	450	5920
Yarrow 3 (La Rosa)	¶20	6365
Quintana, O'Connor 81-A (Tomoconnor)	1600	5925
Williams 2-B (Tomoconnor)	1350	5935
San Patricio County—		
Plymouth, Baker 1 (East White Point)	500	5675
Solar & Ficke 8 (East White Point)	500	5682
Victoria County—		
Barnsdall, McFaddin 32 (McFaddin)	133	4417
Gulf, Traylor B-22 (Heyser)	150	5493
Smith, Marhiljohnni Heirs 1 (WC), 2 mi e Colletto Creek	*	2935
LAREDO DISTRICT		
Duval County—		
Continental, Driscoll A-36 (Driscoll)	525	3360
Magnolia, DCRC 16 (189) (Cedro Hill)	23	1433
DCRC 34 (201) (Eagle Hill)	150	2105
DCRC 41, Weil (Hoffman)	*	2995
Sun, Brueggemann 17 (Fitzsimmons)	350	4319
Texas, DCRC 27 (Cedro Hill)	150	1441
Wellington, Welder 1-G (Seven Sisters)	207	2547
Jim Hogg County—		
Humble, Kelsey Bass 15 (Kelsey)	150	4743
Imperial, Gutierrez 1 (WC), H. Rodriquez sur 142	*	950
McMullen County—		
Ezzell, Fee 40 (Ezzell)	*	1547
Fee 41	*	1556
Fee 42	*	1578
Fee 43 (South Calliham)	*	1111
Jones, Ezzell 96 (WC), South Calliham area	20	1537
Jones, Ezzell 97 (South Calliham)	25	1157
Starr County—		
Aid, Morenes 1 (WC), Pistol Hill area	*	765
Bishop & Moss, Ricaby 2 (North Ricaby)	120	1324
Sun, Speer 2 (Sun)	500	4966
Zimmerman, Wood 5 (South Ricaby)	85	1754
Webb County—		
Harvey & Henderson, Benavides 3 (WC), Volpe area	*	2482
Humble, Laurel 8 (Killam)	23	2040
Laurel 9	25	2035
Magnolia, Benavides 4 (West Cole)	85	2350
Zapata County—		
Carter & Rubsamen, Lopez 1-B (South Mirando Valley)	*	1811
Lopez 5-A (South Mirando Valley)	22	1852
Dulup, Trevino 41 (Escobas)	35	1345
Nordan & Morris, Gutierrez 42 (Escobas)	16	1297
Gutierrez 43	15	1288

*Failures; †Junked; ¶Million cu. ft. gas.

Texas Gulf Coast

First failure at Joe's Lake comes after 23 successes.

Testing new sand in northwest Fannett, Jefferson County.

Houston.—Interest in drilling activity along the Texas Gulf Coast belt was at a low ebb last week because of the 15-day shutdown of producing oil wells. However, a few wildcats were receiving some attention but the general news and interest was: "Are the oil companies going to restore the price of Gulf Coast crude?"

The wildcat receiving the most attention is Glenn H. McCarthy's Houston Farms Development Company 1 in the Chocolate Bayou area, Brazoria County. It still remains a "tight" well with very little information leaking out. Last reports were that another test will be made around 10,215 feet. During the week several tests around 10,225 feet recovered salt water. The perforations were squeezed off and casing will be perforated higher. If it does not produce at this horizon it is believed that the wildcat will be plugged back and tested in 25 feet of sand which showed on an electrical log.

In the Cedar Bayou area, Chambers County, J. R. Turnbull is preparing to carry Sheppard 1, R. A. Porter Survey, deeper after making a test at 6461 feet in sand showing oil. Screen and liner was set but the test failed to show commercially.

In the Clodine area, Fort Bend County, on R. N. Ranger's Blakely 1, T. Habermacher Survey, logged a sand with an odor of oil at 7202 to 7219 feet and a 19-minute drill-stem test through ¼-inch chokes showed four pounds pressure and 19 stands of salt water, one being mud.

N. W. Hunter's Settegast 1 in the Clodine area, E. P. Whithead Survey, was abandoned at 7712 feet. This test attracted attention when broken sands logged at 7180 to 7220 feet had shows of gas and distillate.

On the northwest side at Fannett, Jefferson County, Gulf Refining Company is testing a new sand in Bordages 1, J. Probarth Survey. Casing was perforated with 24 shots from 7467 to 7480 feet and flow was 8,000,000 cubic feet of gas and from 200 to 300 barrels of distillate daily through a 3/16-inch choke. Tubing and casing pressures were 3075 pounds. Hole was drilled to 7854 feet in salt, topped at 7846 feet, and plugged back.

Another test on the flank of Esperson Dome, Liberty County, was down to the producing horizon last week. General Crude Oil Company's Fee 5-B is bottomed at 7680 feet. It topped a large sand section below 7400 feet.

The first failure since discovery of Joe's Lake field, Tyler County, is Republic Production Company's Fee 23 on the north side of the field. It was abandoned at 7775 feet after making a drill-stem test at 7738 to 7755 feet. The test showed two thribbles and one double of salt water. The field was discovered on May 2, 1937, and since that time 23 wells have been completed as oil producers. The first well drilled at Joe's Lake, Fee 1, was abandoned below 8000 feet after drilling into the Wilcox formation. Republic Production Company was completing Fee 22 last week. The hole was drilled to 9014 feet in shale and is the deepest for the field. It tried to find a deeper sand in the Wilcox formation. The hole was plugged back after running an electrical log and 5½-inch casing was set at 7770 feet. It was perforated with 36 shots at 7698 to 7709 feet and it came in flowing 75 barrels daily through a ¼-inch choke.

Geo. Echols, Hebert and Smith are having difficulty in completing their second well at South China, Jefferson County. Last week casing was perforated with 11 shots at 7869 to 7874 feet and swabbing was in progress, showing 90 percent washwater and 10 percent oil. Several tests showed salt water. The discovery well has been shut down by railroad commission order.

North Markham, Matagorda County, looked disappointing last week when Ohio Oil Company abandoned Carlson 2, I&GN No. 2 at 8869 feet. This is the deepest well drilled here. It had a slight show up the hole and cored solid sand with only one shale break from 8269 to 8494 feet.

About 1½ miles northeast of production at Seabreeze, Chambers County, Jack Frazier and Windsor Oil Company's Frist 1, H&TB 97 was aban-

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Navarro, Deere 3	386	7160
Clear Lake—		
Humble, Humble-West Fee C-16	120	5905
Dickinson—		
Mar-Tex Oil Co., M. Stewart 13	682	9048
Fairbanks—		
Amerada-Stanolind, White 15	129	6851
Friendswood—		
Humble, Kiesling-Dixon 11	566	6048
Hastings—		
Stanolind, Moore C-17	481	6080
Joes Lake—		
Republic, Fee 23	*	7775
Louise—		
Albert Plummer, Wharton Estate 1	*	5154
Magnet—		
Humble, Cockburn 15	406	5542
North Markham—		
Ohio, Carlson 2	*	8869
Orange—		
Gulf, Granger A-2	645	5936
Pierce Junction—		
Rio Bravo, Settegast A-34	288	3755
Segno—		
Humble, Kirby B-X-14	102	8220
South Bay City—		
Hamman Exploration Co., Richers 1	264	9159
Thompson—		
Humble, Davis 11	82	4348
H. M. Naylor, Booth 5-B	1078	7795
Shanks 2	953	7944
Tomball—		
Shell, Stehly Fee 5	120	5568
Chambers County—		
Jack Frazier, Frost 1, ne of Seabreeze, H&TN No. 97	*	8954
Ft. Bend County—		
N. W. Hunter, Settegast 1, Clodine area, E. P. Whithead sur	*	7712
Trinity County—		
C. E. McAlpine et al, Dilley 1, n of Trinity, J. Grissett sur	*	2386

*Failures; †Junked; ¶Million cu. ft. gas.

doned last week at 8954 feet in shale. A broken sand showing oil, gas and salt water was cored at 8858 to 8953 feet.

At Long Point, Fort Bend County, Lloyd Farre et al's Beard 1 was coring in sand at 1700 feet last week, topped at 1660 feet, with no shows of oil. A gas sand was encountered at 1420 to 1425 feet. Superior Oil Company after abandoning Beard 1 below 7900 feet at Long Point announced location for Guy C. Kelso 1, 320 feet from the northwest line and 380 feet from the southwest line of an 80-acre tract in the H&TC Section 10.

West Virginia permits fewer than last year

Charleston, W. Va.—West Virginia drilling activity, as reflected by permits issued by N. P. Rhinehart, chief of the state department of mines, dropped slightly in June from the previous month, but continued far ahead of the corresponding month a year ago. June permits totaled 74, compared to 77 in May and 56 in June, 1938. Permits issued during the first six months of this year number 292, compared to 305 issued during the same period of last year.

June permits, by counties, follow: Boone 3, Brooke 3, Cabel 3, Calhoun 6, Clay 4, Doddridge 4, Gilmer 9, Harrison 1, Jackson 2, Kanawha 11, Lewis 1, Lincoln 1, Mingo 1, Nicholas 1, Pleasants 3, Ritchie 8, Roane 7, Tyler 2, Wetzel 1, Wood 1.

South Louisiana

Test northeast of production at Eola looks encouraging. Test being made of still another producing sand at Venice.

Lake Charles.—J. Edward Jones' Sam Barone 1, northeast of production at Eola, Avoyelles Parish, was attracting attention last week. Drilling below 7930 feet in shale, after topping the Sparta lime around 7392 feet, it is running higher than Gulf States Exploration Company's Haas 1 on the east side of the field. The hole will be carried to the Wilcox, and if formations continue to thin up as they have since passing, the Cockfield stands a good chance to add several hundred productive acres to the field.

On the northeast side of Eola, Sid Richardson completed Sam Hass 1 after casing was perforated with 41 shots from 8546 to 8556 feet. The well was cleaning into pits through 10/64-inch choke; tubing pressure was 825 and a casing pressure 1540 pounds.

Tide Water Associated Oil Company is preparing to make a production test on Manhatten Fruit Company 10 in a new producing sand at Venice, Plaquemines Parish. If this well is productive it will open the fifth producing horizon for the field. Last week the well cored oil sands from 7475 to 7535 feet and drilled to 7584 feet where 7-inch casing was set. The previous week this company opened a new sand at 7900 feet.

J. P. Scranton's Martinez 2 on the Lafourche Crossing prospect in Lafourche Parish, attracted more attention last week when 6 feet of broken formation was logged with an odor and cut of oil. The formation was cored at 10,138 feet and the operators were below 10,386 feet in search of additional oil sands. The wildcat has already cored sands up the hole which might produce oil.

W. T. Burton made another test on L & N 1 in the Unknown Pass area, Orleans Parish, last week and recovered salt water, oil and gas. The wildcat was perforated with 10 shots at 10,285 to 10,294 feet and swabbing showed salt water, little oil and a good show of gas. The well was reacidized and it again showed oil, salt water and gas. Perforations are to be squeezed for another test.

On the White Lake prospect in Vermilion Parish, where Louisiana Land & Exploration Company has drilled one wildcat to 11,033 feet, the company has location for Louisiana Furs 2. It is 3375 feet north and 2250 feet east of SWc 16-15s-1e. The abandoned well was in 21-15s-1e. It had a show of gas from 10,199 to 10,209 feet. It is believed that Louisiana Furs 2 is located up on the structure more than the dry hole.

East of production at North Tepetate, Acadia Parish, Atlantic Refining Company will attempt to open new producing horizons in Klumpp 5. The hole is bottomed at 9487 feet and 414 feet of 5-inch casing was set at 9194 feet. It is believed that the casing will be perforated at 9042 to 9050 feet where

South Louisiana Completions

Company, Well and Location	Init. Prod. Bbbls.	Depth
Bancroft—		
Republic, Nettie Smith 1	300	7320
Charenton—		
Knisley Pet. Co., LeBlanc 4	200	1134
LeBlanc 5	150	1132
St. Mary Oil Co., Hertel 2-B	60	1134
Eola—		
Amerada, Whitlow 1	762	8498
Haas 1	*	9181
Sid Richardson, State 2	754	8568
Garden Island—		
Texas Co., State 35	410	5000
Golden Meadows—		
Bennett, Collins 1	21	5173
Jefferson Island—		
Texas Co., State 2	*	7528
Leeville—		
Texas Co., L. L. E. Leeville 71	*	8908
Lirette—		
Humble, LaTerre 3	30	8440
New Iberia—		
Texas Co., Duhe 10	237	3071
Starks—		
Lutcher Moore Lbr. Co., Fee 3 (wo)	100	4496
Villa Platte—		
Continental, A. M. Fontenot 3	448	9023
M. Haas 3	231	9059
Opelousas-St. Landry 4	312	9085
Jefferson Parish—		
California Co., Long Bell Lumber Co. 1, Banister area	¶10,692	

*Failures; †Junked; ¶Million cu. ft. gas.

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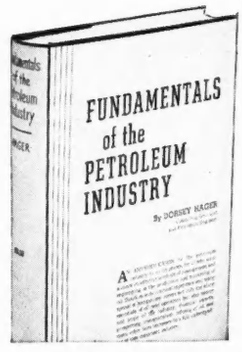

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a sand was cored with a show of gas. The well also had a sand at 7695 to 7720 feet.

On the northwest side at North Crowley, Acadia Parish, Humble Oil & Refining Company was squeezing perforations after making a drill-stem test in a new sand in Stakes 1. The hole was bottomed at 8580 feet and 7-inch casing was set on bottom. It was perforated with 10 shots from 8576 to 8578 feet. The well showed gas, no oil and a 1100-pound tubing pressure through ¼-inch chokes. It will drill deeper.

Continental Oil Company's Levert 1, Pine Alley prospect, St. Martin Parish, will probably demand some attention when it is drilled deeper. The wildcat was taken over from Roper & Todd when it was bottomed at 9037 feet and Continental Oil Company will rig up equipment next week to carry to 11,000 feet or deeper. This was considered a high well for the district when it was temporarily abandoned at 9037 feet.

The California Company's Long Bell Lumber Company 1 on the Banister prospect, Beauregard Parish, was abandoned last week at 10,692 feet after plugging back and making a series of tests up the hole. Each test showed salt water.

Fohs Oil Company's Buckley-Mahler 1 in the DeLarge area, Terrebonne Parish, is now in condition to drill to 13,450 feet and test the horizon found in the discovery well at 13,266 feet. The company has encountered trouble with the well but this has been overcome and 7-inch casing has been set in a sidetracked hole at 12,740 feet. Some time ago the hole was drilled below 12,900 feet, drill pipe stuck and it was plugged back and sidetracked.

Continental Oil Company is preparing to drill a wildcat on the Jug Lake prospect in Terrebonne Parish on farm-out acreage from Fohs Oil Company. Fohs Oil Company gave Continental Oil Company a half interest in 7900-acres for drilling Peters 1, 2300 feet north and 2400 feet west of SEc 32-19s-15e.

Humble Oil & Refining Company has staked location for its first wildcat on a lease of over 360,000-acres taken from Great Southern Lumber Company scattered throughout Livingston, Tangipahoa, St. Helena, St. Tammany and Washington parishes. The first of several 6000-foot wells in Great Southern Lumber Company 1, 660 feet out of NWc 27-7s-5e, Springville area, in Livingston Parish. Lease provides for a 6000-foot test each 12 months for the next 3½ years.

Forty-five Louisiana drilling permits

Shreveport.—Forty-five drilling permits were authorized last week by the Louisiana Conservation Commission of which 13 were for North Louisiana divided among the following parishes: Caddo, 6; Caldwell, 1; Sabine, 2; Union, 1; and Webster, 3.

The 32 in South Louisiana were divided among the following parishes: Ascension, 1; Avoyelles, 1; Beauregard, 1; Cameron, 2; East Baton Rouge, 3; Iberia, 1; La Fourche, 15; Plaquemines, 3; St. John the Baptist, 1; St. Charles, 1; St. Mary, 2; and Vermilion, 1.

North Louisiana Fields

Pine Island deep test going on after no show in Marine. Lake Bisteneau outpost test finds nothing in Pettet sand.

Shreveport.—The lower Marine test being drilled in the old shallow Pine Island field, Caddo Parish, by Stanolind Oil & Gas Company at Dillon Heirs 131, C SE NE 14-21n-15w, proved disappointing last week after failing to pick up any showing in the Cotton Valley lower Marine series of sands above 6500 feet, and the test drilled ahead below 6525 feet. The lower Marine was topped at 5995 feet; elevation is 237 feet.

The test was cored from 5995 to 6525 feet and no specific sands corresponding to the "D" or "E" (Bodcaw) sands that produce in the lower Marine at Cotton Valley were logged. The test had shale from 5995 to 6300 feet, the next 100 feet being shale streaked with sand, and the next 100 feet shale. It had been anticipated that the "D" and "E" sands would be logged above 6500 feet. The test logged massive anhydrite from 2480-2710 feet, and topped the Travis Peak at 3903 feet. In a 7-minute drill-stem test from 3900-47 feet the test showed 170 feet of fluid with a showing of oil and then logged another showing of oil at 3986-93 feet.

Another disappointment was encountered in a 1-mile west outpost of the Lake Bisteneau field, Bienville Parish, when Union Producing Company's Lincoln Land Company 1, C W ½ 17-16n-10w, which logged top of the pettet (basal Glen Rose) lime at 5232 feet, ran formation tester to 5250 feet with no showing, except 15 feet of mud in a 10-minute test. Elevation is 147 feet.

One mile northeast of production at Bear Creek, also in Bienville Parish, Hunt Oil Company's Southern Advance Company 1, located 300 feet east of C 17-16n-10w, failed to log any Pettet lime, main producing horizon at Bear Creek, and drilled ahead at 6958 feet; elevation is 223 feet. The Travis Peak

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo Parish (Shreveport)—		
William C. Leisk, Sokoloski et al 1, 35-18n-14w	240	5630

*Failures; †Junked; ¶Million cu. ft. gas.

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also produces gas-distillate at Bear Creek.

Magnolia Petroleum Company was swabbing Roseberry Unit 1, C SE 29-23n-9w, lower Marine test at Shongaloo, Webster Parish, at 9182 feet. The well flowed for a time by heads after swabbing down 1400 feet.

E. T. Oakes and F. W. Fitch's Loyd 1, SW SW 10-20n-5w, on the west edge of production at Lisbon, continued to swab after being acidized with considerable oil showing. Total depth is 5364 feet.

Ben Levy and associates last week announced plans to drill nine 2300-foot tests on the Crystal Oil & Refining Company fee in Section 25-21n-16w, Pine Island field, Caddo Parish. The lease was secured from Leonard Company.

Two wildcat locations were made last week in North Louisiana. Continental Oil Company will drill Sherrouse 1, NE SE 22-13n-8e, a geophysical prospect, on a 6500-acre block. In LaSalle Parish, Hunt Oil Company will drill another in a series of shallow tests on a large block it holds under lease from Louisiana Central Lumber Company. The new location is Louisiana Central Lumber Company 8, 1380 feet east of west line and 1120 feet south of north line Section 19-11n-4e.

In Catahoula Parish, Goodwin and associates have assigned a 12,000-acre block they assembled in townships 10 and 11 north, ranges 7 and 8 east, to Alexandria Drilling Company of Houston, for a proposed 5000-foot test. In the same parish, Atlantic Refining Company's geophysical unit has completed its work in township 8 north, range 5 east. In DeSoto Parish, Thomas Perryman continues to assemble a block around Section 34-12n-10w.

The Shreveport field's forty-eighth Pettet (basal Glen Rose) oil well, last active operation in the field, was completed in William C. Leisk and associates' Sokoloski 1, NE NE 35-18n-14w, at 5630 feet, flowing 10 barrels of oil per hour.

Gasoline plant starts using Shreveport field gas

Shreveport.—Arkansas Fuel Oil Company last week began operation of its new gasoline absorption plant in the Shreveport field, located at its old Gas Center refinery, one-half mile from production in this field. The plant has a daily processing capacity of 25 million cubic feet of gas daily, although the field's gas allowable is at present below that figure.

The company has contracted to take the "flare" gas from most of the 48 wells in the field. All connections, however, have not yet been completed. Gasoline recovery from this gas runs from 300 to 700 gallons per million cubic feet of gas.

H. L. Hunt is contemplating a recycling plant in the Bear Creek gas field in township 16 north, range 6 west, Bienville Parish. If built, the unit will be installed in 1940.

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Rodessa production nears 100 Million

Shreveport.—The Rodessa field discovered as an oil producing district in July, 1935, had yielded a cumulative oil production of 95,075,612 barrels to August 1, 1939. There were a total of 1103 producing wells in the field on that date, divided as follows: Arkansas, 113; Louisiana, 468; and Texas, 522, divided between 361 in Cass County, and 161 in Marion County.

Cumulative production was divided among the three states as follows: Arkansas, 4,392,373 barrels; Louisiana, 57,396,903 barrels; Cass County, Texas, 27,622,142 barrels; Marion County, Texas, 5,664,195 barrels.

The salt water table for the field on July 15, 1939, showed a total of 418 wells in the field producing salt water in amounts varying from one-half of 1 percent to 95 percent, divided among the states as follows: Miller County, Arkansas, 18; Caddo Parish, Louisiana, 168; Cass County, Texas, 137; and Marion County, Texas, 95. The 418 wells making water was a drop of 7 from the last compiled total.

Arkansas Fields

Columbia County wildcat is coring Smackover lime

El Dorado, Ark.—Chief interest in Arkansas wildcatting last week centered in Atlantic Refining Company's Pine Woods Lumber Company 1, NE NE 16-18-22, Columbia County, geophysical prospect, that was coring at 8898 feet in the Smackover lime, topped at 8814 feet; elevation is 220 feet. The test previously had logged massive anhydrite from 4050 to 4230 feet, topped the Hill (Rodessa) horizon at 4352 feet and the Gloyd at 4546 feet, with top of lower Marine at 6415 feet, coring an oil showing at 7043-60 feet and a salt water sand at 7150-68 feet.

The test topped the Smackover lime at 8814 feet and core analyses to present depth have shown several sections of gas-distillate, with streaks of dense lime at intervals.

Lion Oil Refining Company's Annie 1, Section 29-15-17, Ouachita County, deep test, drilled at 3571 feet and the same company's Hill 1, Section 6-18-13, Union County, drilled at 4147 feet. Joe Modisett's Union Sawmill 3, Section 13-18-12, Union County, was arranging to drill ahead after a core from 2411-31 feet failed to show any porosity.

L. D. Sides, formerly of Ardmore, Oklahoma, is planning a 5000-foot wildcat test on a block assembled around Section 22-10s-20w, Clark County. Horace Cabe and associates have assembled a 13,000-acre block in the same county in the southeast part

Arkansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Columbia County (Magnolia)—		
Southwood Oil Corp., Walthall 1, 22-17-20	432	7532
Simmons 2, 22-17-20	360	7567
Columbia County (Wildcat)—		
Twin City Synd., Hollingsworth 1, 31-17-18	*	7854
LaFayette County (Buckner)—		
Standard, Eddy 1, 7-16-22	171	7253
Union County (Schuler)—		
Lion, Clay 3, 12-18-18	816	7690

*Failures; †Junked; ¶Million cu. ft. gas.

of Township 9 south, Range 20 west.

Two new wells were completed last week in the Magnolia field, Columbia County, and two others there have set final strings of casing.

East Texas Refining Company and Erwin and Leach are standardizing two wells in the Stamps-Lewisville field, LaFayette County, where there are now 5 small wells producing from the Glen Rose at 3400-3500 feet.

Arkansas permits

El Dorado, Ark.—Three drilling permits were issued last week by the Arkansas Oil and Gas Commission, as follows: LaFayette County—East Texas Refining Company and Erwin and Leach, Robert Buchanan Estate 1, C S NE NW 19-16-23; Union County—Crestrock Oil Company, Emma Riley 1, NW SW 9-16-15; and Lion Oil Refining Company, J. H. Calloway 2, 330 feet north and west SEc SE SE 13-18-18. Permit originally issued to Anding and Byrd for Skipper 2 has been transferred to W. P. Wilson for Hamilton and Matthews 1, 50 feet west of C SE NE 31-10-20, Clark County.

Mississippi wildcat drilling progressing

Jackson, Miss.—Union Producing Company's G. C. Woodruff 1, located 1320 feet north and 660 feet east of SWc 13-10n-3w, Yazoo County, on what is locally known as the "Tinsley Dome," a geophysical prospect, last week awaited fishing tools at 4437 feet in the chalk after testing dry when formation tester was run to that depth. With elevation of 175 feet, derrick floor, this test topped black shale at 3602 feet and topped the chalk at 4429 feet.

G. Jeffrey's Gaddis 1, NW SE 26-7n-4w, Hinds County wildcat, is shut down at 7220 feet in sandy shale and boulders. Union Producing Company's C. B. Box 1, C SW 15-14n-4w, Humphreys County, is drilling igneous material at 5440 feet. A soft formation was logged in a core at 5400-5408 feet; elevation is 105 feet. Also in the delta section, Ryan & Anderson's State 1, SW SW 36-12n-8w, topped black shale at 2602 feet and is coring in the same formation at 3013 feet.

In LaFayette County, north Mississippi, Adams Oil & Gas Company's Z. E. Llewellyn 1, NE NW NW 9-10s-1w, is drilling hard rock just below 3012 feet.

Mobile, Ala.—Lake and Lancaster of Pittsburgh, Pennsylvania, have assembled a large block of acreage in Russell County, Alabama, for a test planned to start by September 15. Pure Oil Company has begun leasing in Marion County, in which county Gulf Oil Corporation has a geophysical unit at work. George H. Van Orman of St. Petersburg, Florida, has assembled considerable acreage in the western part of Marion County, Florida.

Hearing postponed

The Texas Railroad Commission has postponed until September 6 its hearing to determine whether the Sealy and North Ward fields in West Texas produce from a common reservoir. Operators advised the commission that they could not appear at the hearing set for August 3.

New Mexico Fields

Mattix well makes 100 barrels per hour on initial test.

Two oil producers in process of completion at Lovington.

Hobbs, N. M.—A large producer for the west portion of the Mattix sandy-lime field, Lea County, was indicated by Continental Oil Company et al's E. E. Jack 6-A-20, C SW SE 20-24s-37e, in testing 100 barrels of pipe-line oil hourly, with gas volume rated at 17,400,000 feet daily. Test was made at 3340-3501 feet after cementing 7-inch pipe at 3338 feet. The well was deepening at 3569 feet, according to late reports, to take in the full pay section before running tubing to complete. Two States Oil Company's Harrison 1 has started up as a west offset.

Seven new operations were allotted Lea County the past week as compared to 11 the previous report. Drilling is expected to be maintained near normal level during the temporary suspension of production activities made effective August 17 by the New Mexico Oil Conservation Commission. Dry gas is available for rigs in the majority of the fields. Operators are hopeful that production forfeited during the shutdown period may later be classed as back allowable, especially since state institutions own the royalty under a large portion of the producing leases in Eddy and Lea Counties.

Two oil producers were in process of completion in the Lovington pool the past week. Magnolia Petroleum Company's State 2-Q, C SE NE 36-16s-36e, logged normal pay section in drilling to 5100 feet, and is awaiting production test. Barnsdall Oil Company's Caylor 1, C NW NW 6-17s-37e, flowed 29 barrels the first hour and 26 barrels the second hour through ¾-inch choke after using acid at 4950 feet. Skelly Oil Company is trying for an east extension in drilling Caylor 1, near C NW NE 6-17s-37e. Other active tests are on inside locations, offsetting production.

Success of Continental Oil Company et al in expanding production in the Monument field to the east has resulted in Stanolind Oil & Gas Company starting operations on Gilluly 5-B, NW NE NW 22-20s-37e.

Anderson-Prichard Oil Corporation's Blinebry-Texaco 2, C SE SW 29-23s-37e, near the junction of the Skelly and Mattix areas, is listed as a completion at 3589 feet, flowing 2½ barrels of oil hourly natural, with gas/oil ratio of 1600 feet per barrel. Prolific gas found in the upper pay was curtailed by landing tubing packers. In the Penrose area, Magnolia Petroleum Company is rigging up to drill Brunson-Argo 3, NW NW NW 10-22s-37e. Ropollo Oil Company's Turner 2, SW SW SW 29-21s-37e, is a new project for the Hardy pool.

Back-allowable production due operators in the Vacuum field during June reached a new peak level of 140,275 barrels with a production quota for the month of 310,350 barrels, according to compilation released by Glen Staley, representative of the Lea County Operators Committee. The shortage in May was 123,305 barrels, and 86,879 barrels the previous month. Relief will be given this area in September when The Texas-New Mexico Pipe Line Company places an additional outlet in service, and Magnolia Petroleum Company relieves purchasers of its controlled production. The field's only new test the past week was Ohio Oil Company's State-Warn 3, account 2, near C SW NW 6-18s-35e, being a south edge location.

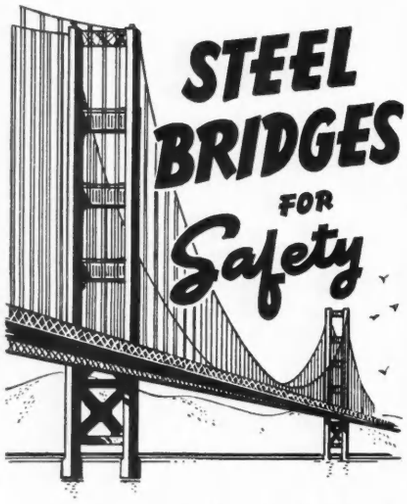
Culbertson & Irwin et al's Lee Carter-Devonian 1, C NE NE 25-23s-36e, semi-wildcat between the Lynn and Skelly pools, failed to fulfill earlier production estimates in flowing 41 barrels of oil in 12 hours after 130-quart nitro shot at 3508-3610 feet. The hole was carried to 3641 feet, with an elevation of 3351 feet. Gulf Oil Corporation's Mattern 8-E, SW SE SE 12-22s-36e, situated in the lime pool between the Penrose and Eunice fields, is a north offset to the most southeasterly producer.

Discovery of a new carbon dioxide gas area for southwestern Harding County may result from numerous shows passed up by A. S. Waddell, Casthwait et al's Peters 1-a, C NE NW 10-14s-31e, in drilling to 2443 feet. First gas was logged at 1115-78 feet, with increases noted at intervals to the 2346-foot level. Operators hold lease on a 32,000-acre block and their first test, contracted to 3500 feet, was junked at 2140 feet after passing up carbon dioxide gas production.

New Mexico Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County (Wildcat)—		
Roundey et al, Fee 1, c se sw 8-23s-26e	*	1917
Lea County (Eunice)—		
Repollo Oil Co., State 4-D-157, nw ne se 12-22s-36e	890	3750
Lea County (Hardy)—		
Magnolia, Marshall Unit 4, c ne nw 34-21s-37e	600	3743
Lea County (Lynn)—		
Shell, Whitten 2, se ne ne 33-23s-36e	227	3635
Lea County (Mattix)—		
Amerada, Johnson 3, c ne sw 27-24s-37e	233	3540
C. B. King Drl. Co., Harrison-Tidal 2, c ne nw 20-24s-37e	120	3601
Lea County (Penrose)—		
Osage Drl. Co., Christmas-Repollo 1, ne ne se 17-22s-37e	110	3707
Lea County (Vacuum)—		
Magnolia, State-Bridges 37, c ne sw 14-17s-34e	408	4642
State-Bridges 38, c ne ne 26-17s-34e	216	4700
State-Bridges 39, c nw sw 26-17s-34e	790	4725
Phillips, State-Mabel 2, c nw nw 35-17s-34e	240	4655
State-Santa Fe 31, c se nw 26-17s-35e	546	4566
Texas Co., State 2-V, c ne sw 34-17s-34e	538	4700

*Failures; †Junked; ¶Million cu. ft. gas.



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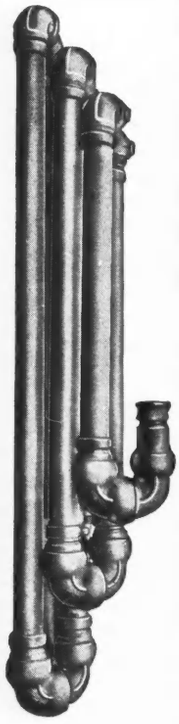

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Rocky Mountain Area

Intensive deepening campaign underway in several fields. Rattlesnake, New Mexico, to be tested to 8000 feet.

Casper, Wyo.—An intensive deepening campaign in the various proved field areas of the Rocky Mountain district has been inaugurated during the past several weeks. Operators are deepening old producers for stepping up the field production in the Iles Dome and Fort Collins fields, in Colorado; the Lance Creek, Badger Basin, Osage, LaBarge, Wertz, Lost Soldier, and Sage Creek fields in Wyoming and the Dry Creek, Cut Bank, and Kevin-Sunburst fields in Montana.

Outstanding results have been obtained in the recent deepening of the Sinclair - Wyoming Oil Company's Wertz, 11-A, SE NW NW 7-26n-79w, an old producer in the Tensleep sand of the Wertz field, in Carbon County, southern Wyoming. Hole formerly bottomed at 5974 feet in the producing horizon and is now being deepened and tested at 15-foot intervals to determine the productivity of the entire Tensleep (Pennsylvanian) section. A test run at 6131 feet showed a daily production of 3030 barrels in 24 hours, placing the well at the top of the ladder for production in this field as well as in the upper producing brackets for the state.

The Lance Creek field, in Niobrara County, eastern Wyoming, also is active in the testing of lower formations as operators continue the practice of deepening Sundance (Jurassic) formation producing wells for recompletion in the Minnelusa (Pennsylvanian) horizon only recently developed as commercial in this area. The importance of the deep sand development, however, has been overshadowed during the past several weeks by the opening of a new high on the northeastern end of the Lance Creek structure, which has greatly extended the Sundance producing area of the field and may completely change the eventual output of the field which already ranks in first place in the Rocky Mountain area, having surpassed early this year in daily output the production of the famous Salt Creek field.

Continental Oil Company's Rodeo 7, C SW SW NE 35-36n-65w, was spotted this week in the Lance Creek field, increasing the number of active drilling wells in that area to 11, while 2 good producing wells are in process of completion. Ohio Oil Company is testing over 1400 barrels daily from the Leo sand in its Elizabeth Lamb—Account 2-12, NW SW SW 5-35n-65w, an inside location; while Argo Oil Corporation's US-40 1, NW NW SW 8-35n-65w, in the southern sector of the field, is flowing at the rate of 95 barrels an hour on test. This well is also producing from the second Minnelusa horizon.

Following completion of its record producer a week ago in the Garland field, Big Horn County, northern Wyoming, Ohio Oil Company is drilling Hannah Davis 2, SW SW NW 34-56n-97w, on an offset location to the big producer. Surface casing was set at 130 feet in the hole and is drilling ahead below 1130 feet. The Madison lime at around 4000 feet is the principal producing horizon of the field.

Sundance Test at Fort Collins

The old Fort Collins field, in Larimer County, Colorado, will be tested to the Sundance by Continental Oil Company's Meyer 1, CWL SE SW 19-8n-68w, an old producer to which the company is moving in rotary to deepen from the Dakota formations. Well bottoms at 4492 feet in the Muddy sands where it was originally completed in 1925 by Union Oil Company of California.

Another deep test for the Rocky Mountain area is seen in Continental Oil Company's announcement of an 8000-foot test to be drilled in the shallow Rattlesnake producing field in San Juan County, northwestern New Mexico. At present producing high-gravity crude from sands around 900 feet, the field will be tested to below the 7000-foot level in the company's Rattlesnake 100, SE NW NE 2-29n-19w. Heavy rotary equipment has been rigged up. Water well is completing and the test will spud this week.

Several tests are getting underway in the Baxter Basin gas fields of Sweetwater County, southwestern Wyoming. Mountain Fuel Supply Company is building road to Mosey 1, NW NW NW 18-18n-104w, in the Middle Baxter Basin field. In the South Baxter Basin field, Wyoming - California Petroleum Corporation is rigging cable tools for Government 2, W½ NW SW 24-12n-104w. The fields are the principal gas reserves for the lines serving Salt Lake City and other points in the southwestern Wyoming-Northeastern Utah community and are being drilled this year to augment the natural gas supply for these lines.

Mountain States Completions

MONTANA

Company, Well and Location	Init. Prod. Bbbls.	Depth
Glacier County (Cut Bank)—		
Glacier Prod. Co., Corrigeaux 3, w sw ne 29-33n-5w	264	3095
Toole County (Kevin-Sunburst)—		
Huso Bro., Ellingson 1, cne sw 14-35n-3w	8	1754
Ramona Oil Co., Government 3, cel se nw	*	1563
W. E. Rice & Co, Kearns 4, ne ne se 17-35n-2w	*	1678

WYOMING

Big Horn County (Garland)—		
Ohio, Hannah Davis-Syverson 1, sw nw (lot 53) 34-56n-97w	2520	4045

*Failures; †Junked; ¶Million cu. ft. gas.

Commission gives New Ivy pool 10-acre spacing

Ten-acre spacing for wells in the New Ivy pool, Shackelford County, was provided in the emergency order issued by the Texas Railroad Commission last week. At the same time, the commission announced that a hearing to fix permanent rules would be held in Austin August 10.

California Fields

Another East Coalinga Eocene wildcat shows as producer. Arvin extension of Mountain View field further extended.

Los Angeles.—Discovery of an oil sand in Bandini Petroleum Company's No. 48-18, a wildcat in the East Coalinga Eocene area; gas and oil showings on a drill-stem test in Western Gulf Oil Company's KCL-Panhandle 1, wildcat in the Buena Vista area, Kern County, and lengthening of the Arvin extension to Mountain View, were highlights of the week in California.

Bandini Petroleum Company's No. 48-18 topped the Gatchell sand at 7970 feet and is coring below 8100 feet, and will take in more sand before setting casing for a production test. The same Eocene sand had an initial flow of 3000 barrels in a well drilled by Amerada Petroleum Corporation a short distance northwest.

Western Gulf Oil Company's KCL-Panhandle 1, Section 3-32-26, in the south end of San Joaquin Valley, on drill-stem test produced five million feet of gas and a spray of high-gravity oil. It then was cored further into the upper Stevens sand and 9⅝-inch casing has been set at 10,009 feet; however, more formation is to be penetrated before making a production test. The sand appears similar to that found at Coles Levee.

Arvin Extension

Extension of the Arvin field, southeast of Bakersfield, is proven through Superior Oil Company's Cattani 1, Section 15-31-29, making 1000 barrels of 27.9 gravity oil at 6152 feet. Cattani 1 is a short distance south of two of the biggest wells completed at Arvin.

In the north portion of Arvin field, Richfield Oil Corporation's Mott 1, Section 9-31-29, continues to core ahead in the Chanac oil sand and shale below 6100 feet. During a formation test this project produced for 20 minutes. Standard Oil Company's Tupman 1, semi-wildcat, Section 22-31-29, is drilling below 7100 feet in the Santa Margarita shale without showings. The Texas Company's Jewett 2, Section 16-31-29, cored below 7100 feet in Santa Margarita sand and shale and has yet to find interesting showings.

Richfield Oil Corporation has completed foundation for No. A-58-29, Section 29-30-25, in the western portion of Coles Levee field, Kern County. On a formation test, the operator's Western A-12-33, Section 33-30-25, flowed 1300 barrels daily from 8580 feet along with 6,000,000 cubic feet of gas. It will be drilled deeper. Western No. 2B-14-3, Section 3-31-25, is coring below 9600 feet, having topped the Stevens zone at 9342 feet. Standard Oil Company's location for KCL 20-4 is graded in NWc Section 9-31-25 at Coles Levee, and KCL A-1-1, Section 19-30-25 cored shale and oil sand below 9950 feet but has been plugged back to 9884 feet and is slated for completion within a week with 7-inch cemented at 9170 feet.

Revival of drilling activities in the Dudley Ridge area is being led by Graphic Oil Company. Its initial test is in Section 34-23-20, which is approximately 20 miles southeast of the south end of Kettleman Hills, Kings County. The expectation is that production will be found short of 4000 feet in Miocene, although the company may make a 10,000-foot test out of it as former wildcat wells are believed to have not been deep enough.

Basis for the new search at Dudley Ridge is that it is said to be a paralleling fold to the Kettleman Hills structure. Development of the Eocene at Kettleman Hills followed by a similar discovery at Coalinga Nose, Fresno County, and the discoveries, fan shaped out of Bakersfield which include Rio Bravo, Coles Levee, Tupman Western, Greeley, Ten Section, and Wasco, have all had an influence on the new explorations at Dudley Ridge. Seaboard Oil Company, Shell Oil Company, Honolulu Oil Company, Hancock Oil Company, The Texas Company and Superior Oil Company have recently taken over properties. The Dudley Ridge anticline is perhaps one of the last available areas along the floor of the San Joaquin Valley yet open to real deep zone exploration where gas in commercial quantities is also guaranteed through the performance of the Crocker & Cameron wildcat, in NEc Section 20-23-20, King County, which produced in excess of 30,000,000 cubic feet of gas from 3200 feet.

California Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles County (Montebello West)—		
Beverly Montebello, Beverly 2	576	7651
British-American, Oswald 1	800	7643
Graham & Loftus, Coffman 1	350	7650
Union, La Merced 34	1100	7640
Los Angeles County (Newhall-Potrero)—		
Barnsdall, R. S. F. 7	315	7104
Los Angeles County (Rosecrans-Athens)—		
King & Weymouth, Averill 2	135	7837
Union, Rosecrans 33	136	7875
Los Angeles County (Wilmington)—		
Long Beach Oil Dev., "Y" (LB) 8	561	3955
"Y" (LB) 9	450	3983
Ring Oil, No. 4	540	5727
Kern County (Belridge)—		
Richfield, Belridge 3	200	8490
Fresno County (East Coalinga Eocene)—		
Texas Co., Exeter 2	1142	8097
Kern County (Fruitvale)—		
Western Gulf, Red Ribbon 11	90	3878
KCL-Bellevue 2	87	3883
Kern County (Kern River)—		
W. T. Dick, Dick 1	5	665
Kern County (Rio Bravo)—		
Union, KCL 61-34	1740	11505
Ventura County (Rincon)—		
C. C. M. O., Hobson B-27	140	4917
Kern County (Round Mountain)—		
Crestmont Oil, Coffee 2	*	1590

*Failures; †Junked; ¶Million cu. ft. gas.

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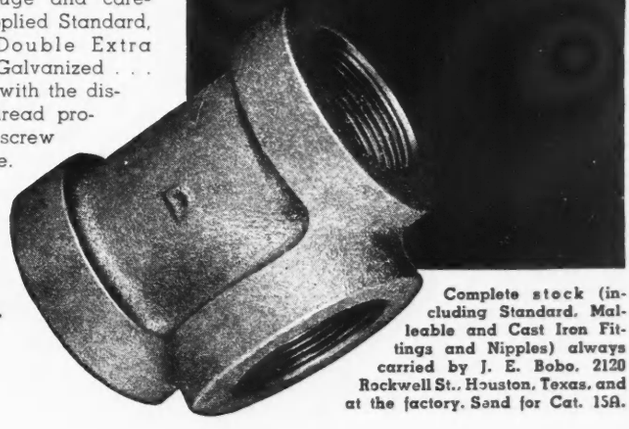

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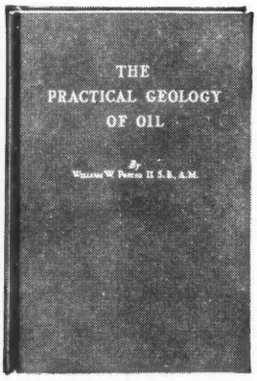

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Michigan Fields

Walker field in Kent County extended another half mile. Three wildcat tests have showing of oil or gas production.

Mt. Pleasant, Mich.—The Walker field in Kent County was extended a half mile farther on the northwest side as the major development in Southwestern Michigan during the week. Meanwhile, a semi-wildcat in Clare County completed for a commercial gas well; a wildcat in Isabella County drilled Traverse lime oil saturation and a wildcat in Midland County tested a gas show in the Antrim shale-lime.

Edward B. Strom's Brenner 1, NE SE 25-7n-13w, Tallmadge Township, Ottawa County, a half mile northwest of Voorhees' Cummings 1, which extended the Walker pool a mile northwest a month ago, flowed 65 barrels on an 8-hour test in Traverse lime at 1901 feet. Fisher & McCall, Inc.'s Goodale 1, SE SE SE 25-7n-13w, a half mile south of the Brenner, also had oil saturation in Traverse at 1880 feet. Both tests will be acidized.

The Walker field as now developed covers an area 4 miles long northwest-southeast and is just under 2 miles wide at its widest point.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
Bridger Basin, Commans 1, ne ne ne 28-3n-13w	*	1825
W. Spencer Cook, Rigterink 3, ne sw nw 22-4n-13w	*	1600
Daily Crude, Steffes 4, ne sw se 2-4n-13w	500	1639
Redman Oil Co., Fee 6, c w se ne 22-4n-13w	250	1587
Lima Oil Co., Nahr 4, ne se nw 22-4n-13w	100	1588
J. V. Wicklund, Smith 3, ne se ne 22-4n-13w	150	1578
Salem Oil Co., Smith 2, sw nw nw 23-4n-13w	240	1583
Barry County—		
D. F. Jones, Smith 1, sw sw sw 9-1n-8w	*	1918
Bay County—		
C. W. Teater, Jozwiak 1, c n ne sw 34-18n-3e	*	1746
Clare County—		
American Dr. Co., Newcomber 3, s ne se 29-19n-6w	2000	3877
Pure, State A5, c s se nw 33-19n-6w	1700	3894
Bicknell B10, c s se nw 28-19n-6w	325	3880
Van Horn 2, c s nw nw 34-19n-6w	1800	3901
Taggart Bros., Sherwood 12, c se 7-18n-5w	¶13	1531
Kalamazoo County—		
Twin Drilling Co., Upjohn 2, c e ne ne 6-2s-10w	*	1488
Kent County—		
Sun, Christensen 1, ne ne nw 27-6n-11w	*	2230
Voorhees Dr. Co., Cummings 2, ne sw se 30-7n-12w	800	1889
Wolverine Nat. Gas Co., Hoey 1, ne se sw 30-7n-12w	600	1873
Smith & Wolverines, Riddering 1, se se se 30-7n-12w	600	1925
Muskegon Dev. Co., Schipper 1, ne nw ne 31-7n-12w	75	1870
Voorhees Dr. Co., Walsh 1, nw ne ne 31-7n-12w	60	1890
Wolverine Nat. Gas Co., Walsh 1, nw ne ne 31-7n-12w	50	1900
Smith & Wagners, Englesma 1, sw nw nw 32-7n-12w	80	1901
Wolverine Nat. Gas Co., Story 1, ne nw sw 32-7n-12w	60	1888
R. F. Voorhees, Slykhouse 1, nw se nw 5-6n-12w	300	1810
Lamar Oil Co., Gravel Co. B1, se ne sw 3-6n-12w	40	1796
Van Buren County—		
Bridger Basin, Preston 2, sw nw ne 13-1s-15w	600	1204
Century Oil Co., Siskanimetz 1, nw nw nw 11-4s-14w	*	1488
Michi-Cal Oil, Piper 1, se nw se 36-1s-16w	*	2587

*Failures; †Junked; ¶Million cu. ft. gas.

Taggart Brothers' Sherwood 12, C SE 7-18n-5w, Lincoln Township, Clare County, a semi-wildcat, drilled 12,900,000 feet of gas in Michigan Stray sand at 1531 feet to a point to a brisk gas drilling campaign in the district.

W. R. Borough, Inc.'s Walch 1, SW SW NW 18-15n-6w, Sherman Township, Isabella County, filled up and flowed an estimated 20 to 30 barrels of oil over a 5-day period from Traverse limestone at 3450 feet. Traverse was topped at 3172 feet. Operators set 2-inch tubing and plan to make a production test from the Traverse, temporarily leaving the deeper Dundee which was the original objective. The wildcat is about three miles northwest of the old Sherman pool, opened in 1936.

Enough gas was logged in the Antrim lime-shale at 2900 feet to warrant a production test on W. F. Brown's Coleman 1, Section 11-13n-2e, Ingersoll Township, Midland County, a wildcat.

Figures compiled this week revealed that the Blomingdale oil field in Van Buren County, discovered just a year ago this week, has produced an average of 3244 barrels to the acre from the 1200-foot Traverse limestone. Total production amounted to 3,000,000 barrels. The field has 925 acres producing, including the townsite which covers about 190 acres.

The townsite accounted for over-drilling. There are 149 producing wells; 25 are flowing and the rest are pumping from 100 barrels per dav down.

No other shallow field in Michigan has approached the recovery already made in Bloomingdale.

The City of Grand Rapids this week leased 160 acres of municipal land, of which 116 acres is on the sewage disposal plant, to Rex Oil & Gas Company of Alma, for $2500 in cash and a ⅛ royalty for the tract, and agreed to start four wells by August 22. The land is semi-proven. In the only previous lease deal made by the city, Rex got a 22-acre piece in proven production for a straight ⅛ royalty.

The State Conservation Department, Lands Division, last week auctioned off four lots in Section 29-19n-6w, Redding Township, Clare County, comprising 77.6 acres for a cash bonus of $5900. Gulf Refining Company paid a bonus of $5150 for two lots (40 acres); Pure Oil Company paid $500 for 11.6 acres and American Drilling Company paid $250 for 26 acres. The state listed all of the land as proven; stipulated immediate drilling; 20-acre locations; and a sliding scale royalty starting at ⅛ up to 100 barrels per day; 1/6 from 100 to 200 barrels; and 1/5 from 200 to 300 barrels. State prorate on 20-acre locations in the Redding field is 250 barrels.

Meanwhile, the conservation department announced another state lease auction for September 6, when approximately 16,000 acres in Arenac, Gladwin, Missaukee, Montmorency, Osceola, Presque Isle and Ogemaw counties will go on the block. All of the 16,000 is listed as wildcat.

WILDCAT REPORT
New Starts and Completions

STATE	WILDCATS STARTED		WILDCAT TESTS COMPLETED							
			Total		Oil		Gas		Dry	
	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year
Alabama	...	4	1	2	...	...	...	...	1	2
Arkansas	...	25	1	16	...	1	...	...	1	15
California	3	149	3	71	...	20	...	2	3	49
Colorado	...	2	...	1	...	...	...	...	...	1
Florida	...	2	...	1	...	...	...	...	...	1
Georgia	...	3	...	1	...	...	...	...	...	1
Illinois	22	393	23	291	2	21	1	1	20	269
Indiana	2	31	...	22	...	8	...	1	...	13
Kansas	7	166	8	157	2	50	1	5	5	102
Kentucky	6	24	2	16	...	7	...	...	2	9
Louisiana	4	84	1	65	...	11	...	1	1	53
North Louisiana	2	30	...	20	...	3	...	1	...	16
South Louisiana	2	54	1	45	...	8	...	...	1	37
Michigan	10	162	6	205	...	15	...	...	6	190
Mississippi	...	9	...	5	...	...	...	...	...	5
Missouri	1	36	1	6	...	...	...	...	1	6
Montana	...	2	...	2	...	...	...	...	...	2
Nebraska	...	1	...	1	...	...	...	...	...	1
New Mexico	...	25	1	17	...	1	...	1	1	15
New York	...	...	...	3	...	1	...	1	...	1
Oklahoma	2	122	6	124	2	16	...	5	4	103
Ohio	...	4	...	9	...	1	...	...	...	8
Pennsylvania	...	3	...	2	...	...	...	...	...	2
South Dakota	...	2	...	...	...	...	...	...	...	...
Texas	19	705	34	768	2	72	1	13	31	683
East Texas	4	82	2	71	...	3	...	1	2	67
North Texas	3	94	4	149	...	24	...	1	4	124
Gulf Coast	3	76	3	64	...	5	...	1	3	58
Panhandle	...	7	1	7	...	...	...	...	1	7
South Texas	6	308	20	340	2	...	1	...	17	...
West Texas	3	138	4	137	...	14	...	2	4	121
Utah	...	1	...	...	...	...	...	...	...	...
West Virginia	...	2	...	1	...	...	...	...	...	1
Wyoming	1	5	...	1	...	...	...	...	...	1
Total U. S.	76	1,962	87	1,794	8	224	3	30	76	1,540

ALABAMA

COMPLETIONS

Barbour County—H. A. Stebbinger's Mrs. Alyce Robertson 1, c ne ne 19-10n-25e, 7-in csg 4500 ft, dry, abnd 5218 ft.

ARKANSAS

COMPLETIONS

Columbia County—Twin City Syndicate's Hollingsworth 1, c of e 40-ac nw sw 31-17-18, elev 271 ft, top Saratoga 2310 ft, top Tokio 3005 ft, top James lime 3915 ft, top Red Beds 5115 ft, top Travis Peak 4330 ft, cored sw sand 5545-60 ft, top Cotton Valley (lower Marine) 5584 ft, top Smackover lime 7802 ft, salt water, abnd 7854 ft.

CALIFORNIA

FIRST REPORTS

Los Angeles County—Shell's Sesnon-Porter 1, core hole, 695 ft n 10,864 ft e swc 4-2n-16w, Lime Kiln canyon, lcn.

Ventura County—K. C. Oil's Marr 1, 2100 ft s 1700 ft w nec 32-3-17, Santa Susnna area, rur.

San Joaquin County—Utilities Pet. Co.'s No. 1, 2457 ft s 2300 ft e w¼c 7-1n-6e, Stockton area, rur.

COMPLETIONS

Fresno County—Oils, Inc.'s Fearon 2, se 18-20-15, abnd 5536 ft.

Kern County—Dilamar Oil's Quinn 1, nw 15-25-27, Richgrove area, abnd 2956 ft.

Santa Barbara County—O. C. Field Gasoline Corp.'s Corp 1, sec nw 21-9-33, abnd 7382 ft.

ILLINOIS

FIRST REPORTS

Clark County—F. D. Strickler's Minnie Jackson 1, nw ne sw 19-10n-13w, Martinsville tnp, dr.

Clinton County—Williams et al's Dunn 1, sw nw ne 1-1n-1w, Brookside tnp, rig. Paul Mosebach et al's C. Robbin 1, sw se 5-1n-3w, Santa Fe tnp, location for test of Devonian and possibly Trenton.

Douglas County—Lewellen & Phillips' Kennedy Bros. 2, sw se nw 34-16n-9e, rigging up machine.

Edwards County—Longhorn Oil & Gas Co.'s Mary Kraft 1, sw nw sw 31-2s-14w, dk.

Fayette County—J. Hausman et al's Neathery 1, nw nw sw 29-7n-1w, loc.

Franklin County—Gulf Refining Co.'s U. S. Fuel Co. 1, nw ne ne 32-5s-3e, Ewing tnp, loc.

Gallatin County—Vanderberg's Busik 1, se se nw 11-8s-10e, drilling at 1350 ft.

Madison County—E. J. Goldschmidt's Simon Plog 1, nw nw se 8-5n-5w, Leef tnp, loc.

Marion County—Wallace Wright et al's Bryant 1, c s ne ne 4-1n-1e, Centralia tnp, loc. Beacon Oil & Gas Co.'s Vurcell 1, ne nw sw 31-2n-3e, Stevenson tnp, loc. Ray Farrior's H. Balke 1, sw sw sw 21-4n-4e, Meacham tnp, cellar and pits. Ewing et al's McMackin 1, 1170 ft fr s line and 940 ft fr e line, sw 6-2n-3e, moving in machine.

Monroe County—Davis & Brand's C. Krause 1, s½ s½ nw sw 30-3s-7w, loc.

Montgomery County—Soliday Sons' Moon 1, ne ne sw 11-7n-3w, to deepen from 1065 ft.

Moultrie County—Signal Hill Oil Co.'s E. L. Beale 1, se se ne 29-15n-5e, dr.

Perry County—J. J. Broadus' Roundtree 1, nw sw se 29-4s-1w, dr.

St. Clair County—Gladiator Oil Co.'s Hoffstetler 1, n½ ne se 35-1n-10w, dr.

Wabash County—Dennis' Griess 1, c w½ e½ sw ne 24-2s-14w, spudded.

Wayne County—Pryor & McIntosh's Alva Simpson 1, se ne se 10-3s-8e, Barn Hill tnp, dr. Stengel's Shelton 1, c n½ ne ne 21-2s-9e, dk.

White County—H. H. Weinert's Miller-Andrews 1, c s½ sw nw 29-3s-8e, dr.

COMPLETIONS

Alexander County—Frank George et al's Riggle 1, sw nw nw 35-15s-2w, Unity tnp, abnd after spudding to 60 ft.

Christian County—Treleaven's Noel Micenheimer 1, c sw sw nw 31-12n-2w, Johnson tnp, location abnd after derrick erected.

Clinton County—Witcher Development Co.'s F. C. Monken 1, ne ne se 3-1n-2w, Lake tnp, top Bethel 1310 ft, abnd 1325 ft.

Edwards County—Longoria et al's R. S. Severns 1, sw nw nw 18-1s-10e, Shelby tnp, abnd loc. Massad et al's Amy Toops 1, se nw se 13-3s-10e, French Creek tnp, abnd loc.

Marion County—J. Booth et al's Gross 1, sw nw nw 34-3n-2e, top Ste. Genevieve 2130 ft, abnd 2233 ft.

Saline County—Kingwood Oil Co.'s J. Oliver 1, se nw nw 11-10s-6e, Independence tnp, top St. Louis 2525 ft, abnd 2585 ft.

Shelby County—Kingwood Oil Co.'s Howe 1, se se se 7-10n-4e, Clarksburg tnp, top Ste. Genevieve 1848 ft, abnd 2454 ft.

Tazewell County—Morton Oil & Gas Co.'s Wm. Strunk 1, nw nw se 18-25n-3w, Morton tnp, top Maquoketa shale 1335 ft, abnd 1390 ft.

Wabash County—Hughes et al's Tanquary 1, sw sw ne 30-1s-13w, Mt. Carmel tnp, top Ste. Genevieve 2809 ft, abnd 2976 ft. Buell & Hannon's Shauf 1, sw nw se 31-2s-13w, Compton tnp, top Ste. Genevieve 2772 ft, abnd 2945 ft. Zeigler & White's C. E. Shultz 1, sw ne sw 31-2s-13w, Compton tnp, abnd loc. Oil Exploration Co.'s F. Bosecker 1, ne se nw 13-2s-14w, Compton tnp, dry in McClosky and abnd at 2969 ft.

Washington County—Max Conrey's Joint Stock Land Bank 1, sw sw ne 7-2s-4w, Plum Hill tnp, top Aux Vases 1145 ft, abnd 1296 ft. Ed Robinson et al's Brinkman 1, c nw nw se 12-2s-4w, Plum Hill tnp, top Aux Vases 1145 ft, abnd 1296 ft.

Wayne County—Carl Robinson's Carter 1, c se ne nw 15-2s-8e, Grover tnp, top McClosky 3315 ft, abnd 3360 ft. White Way Oil Co.'s Sherman Walker 1, ne se se 8-3s-9e, Leech tnp, top Ste. Geneviev 3395 ft, abnd 3480 ft. Hunt's Harper 1, c ne se sw 3-3s-6e, Orel tnp, abnd lcn. Earl Corley's W. B. Draper 1, c se nw ne 15-3s-6e, Orel tnp abnd loc.

White County—Sun Oil Co.'s C. W. Ford 1, nw ne ne 18-5s-14w, Hawthorne tnp, top McClosky 2998 ft, pumped 20 bbls oil and 25 bbls water in 16 hours to extend New Harmony pool of Posey County, Indiana, to Illinois side of Wabash River, td 3017 ft. Eason Oil Co.'s Storm Heirs 1, c w se sw 14-6s-9e, Haralds tnp, top McClosky 2984 ft, flowed 12,300,000 cubic feet of gas to open Storms gas pool, td 3079 ft. Superior Oil Co.'s S. Stum 1, c sw sw 15-5s-14w, Hawthorne tnp, top Ste. Genevieve 2950 ft, abnd 3040 ft.

INDIANA

FIRST REPORTS

Daviess County—Ralph H. Neely & J. S. Young Jr.'s E. Stuffle 1, ne ne 29-4n-5w, moving in materials.

Knox County—A. W. Cherry & Barron Kidd's C. Schwab 1, ne Lot 44, Division C, Vincennes Commons, 2n-10w, moving in materials.

KANSAS

FIRST REPORTS

Barton County—Ash et al's Montgomery 1, nwc 11-16-11w, pits. Bradley Oil Co. et al's Dolecheck 1, c el se nw 26-16-12w, dr.

Ellsworth County — Central Petroleum et al's Schepmann 1, csl sw nw 27-17-10w, dr.

Johnson County—McCain et al's Lyons 1, nw sw ne 27-13-22e, dr.

Pawnee County—Cities Service Oil Co.'s Robert 1, c se 31-21-15w, dr.

Rice County—Jones et al's Behnke 1, c w½ sw nw 25-18-10w, rur.

Russell County—Phil-Han Oil Co.'s Mai 1, cnl s½ ne 34-14-14w, dr.

COMPLETIONS

Barton County—Brouk & Iron Drilling Co.'s Pospishel 1, nec se 20-17-15w, 4 mi n Otis oil and gas pool, top Arbuckle lime 3548 ft, acidized 2000 gals, td 3573 ft, 231 bbls, 38 gr, completed.

Cowley County—Shaffer et al's Starlin 1, nec sw 27-30-4e, 1 mi nw David pool, top Lansing 2316 ft, top Mississippi 2953 ft, top Arbuckle 3353 ft, abnd 3357 ft. Nell et al's Grant 1, swc 18-31-3e, n Churchill pool, top Arbuckle 2815 ft, pb 2415 ft, pay zone 2320-40 ft in Kansas City, ½ bbl, abnd.

Geary County—Scheu et al's Aye 1, nw sw nw 10-12-8e, 15 mi e Junction City, top Mississippi 1900 ft, top Hunton 2125 ft, abnd hfw 2239 ft.

Johnson County—Hammel et al's Bross 1, nw sw se 4-12-24e, 3 mi ne Monticello gas pool, completed, td 520 ft, 500,000 cu ft gas.

Russell County—Witt's Speere 1, swc ne 7-14-14w, ne Gorham pool, top Lansing 3082 ft, td 3170 ft, acidized 8000 gals, 1310 bbls, gr 38, completed.

Stafford County — Virginia Drilling Co.'s Teipermann 1, nec sw 29-21-12w, near Mueller pool, top Lansing 3260 ft, top Arbuckle 3610 ft, acidized 800 gals, tested 2 bbls, hfw, abnd 3640 ft.

Sumner County—Palmer's Lawson 1, swc se 9-35-2e, between n Vernon and Padgett pools, top Mississippi 3365 ft, top Simpson 3572 ft, top Arbuckle lime 3654 ft, abnd 3670 ft.

KENTUCKY

FIRST REPORTS

Henderson County—Belmont Oil Company's William Watkins 1, 4 miles south of Henderson and near town of Anthoston, surface casing set for proposed McClosky test.

Daviess County—Mecca Oil Co.'s Tilden Ellis 1, 1400 ft from west line and 1800 ft from south line, Section 9-Q-30, set 12½-inch casing to 117 ft, 10-inch to 430 ft, dr below 550 ft.

Hancock County—Dewey Ramsey's M. L. Compton 1, 1200 ft from west line and 2700 ft from south line, Section 12-P-34, dr. Lion Oil & Refining Co.'s O. E. Gabbert 1, 1700 ft from east line and 1900 ft from north line, Section 13-Q-32, dr 100 ft. Mohawk Drilling Co.'s Hancock Land & Improvement Co. 1, 300 ft from north line and 2400 ft from east line, Section 20-P-34, drilling with core ma-

chine. Ray Beard et al's Jess Barnett 1, 100 ft from north line and 600 ft from east line, Section 9-P-34, dr. W. J. Flesher's Cal Young 2, 1500 ft from north line and 2400 ft from east line, Section 1-P-33, top Ste. Genevieve at 763 ft, set 8-inch to 765 ft, recovered oil show between 878 and 884 ft, dr at 1000 ft.

COMPLETIONS

Hancock County—Ray Beard et al's Jess Barnett 1, 100 ft from north line and 600 ft from east line, Section 9-P-34; top Bethel 492 ft, show oil from 492 to 517 ft, set 4⅞-inch to 625 ft, abnd 724 ft.

McLean County—W. E. Hupp et al's Nancy Almon 1, ¾-mile southeast of Island, dry in McClosky and abnd 2117 ft.

McLean County—H. H. Schwartz' Traylor-Frissee 1, 3 miles southwest of Beech Grove, top Tar Springs 511 feet, top Bethel at 932 feet, top Ste. Genevieve at 1055 feet, top McClosky at 1231 feet where 4 feet of saturation was cored. Inability to shut off formation water on drilling plug forced abandonment at 1235 feet.

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NORTH LOUISIANA

FIRST REPORTS

Franklin Parish — Continental Oil Co.'s Sherrouse 1, ne se 22-13n-8e, lcn.

La Salle Parish—Hunt Oil Co.'s La. Central Lbr. Co. 8, 1380 ft e of wl and 1120 ft s of n l 19-11n-4e, rig.

SOUTH LOUISIANA

FIRST REPORTS

Jefferson Parish—California Co.'s Adams-Ruttley 1, Barataria prospect, start at intersection of Bayou Barataria and n township line of 16s-23e, thence w along township line 450 ft, thence s 270 ft in sec 2-16s-23e, mim.

Terrebonne Parish—Continental's LaTerre 1, Jug Lake area, center of se¼ sw¼ of sec 32-19s-15e, lcn.

COMPLETIONS

Livingston Parish—Fowler & Tower's Hood 1, Denhan Springs area, 990 ft w and 660 ft n of sec of sec 37-7s-3e, abnd 8008 ft.

MICHIGAN

FIRST REPORTS

Allegan County—Mee & McKenna's Balch 2, sw nw sw 29-2n-15w, rig.

Barry County—Freeman Oil Co.'s Schroeder 1, ne ne ne 5-4n-10w, rig.

Berrien County — Tamblyn Development's Wood 1, se ne sw 4-3s-17w, lcn.

Cass County — Tamblyn Development's Beardsley 1, ne nw se 14-8s-15w, rig.

Kent County—Huffman Drilling Co.'s Barker 1, ne ne ne 20-8n-10w, dr. E. W. Collin's Snyder 1, se se sw 16-8n-10w, rig.

Ottawa County—Century Oil Co.'s Bouwkamp 1, sw sw ne 35-8n-14w, rig, Freeman Oil Co.'s Huyser 1, ne nw nw 32-5n-14w, rig.

St. Clair County—Lee Brown's Beals 1, ne nw nw 32-7n-16e, dr.

Van Buren County — T. K. Buzard's Schwenke 1, nw nw nw 16-3s-13w, rig.

COMPLETIONS

Barry County—D. F. Jones' Smith 1, sw sw sw 9-1n-8w, Traverse 1870 ft, abnd 1918 ft.

Bay County—C. W. Teater's Jozwiak 1, c n ne sw 34-18n-3e, abnd at 1746 ft in Berea.

Kalamazoo County—Twin Drilling Co.'s Upjohn 2, c e ne ne 6-2s-10w, abnd 1488 ft.

Kent County—Sun Oil Co.'s Christensen 1, ne ne nw 27-6n-11w, Traverse 2011 ft, abnd 2230 ft.

Van Buren County—Century Oil Co.'s Siskaninetz 1, nw nw nw 11-4s-14w, Traverse 1027 ft, so 1029 ft, Monroe 1407 ft, abnd 1788 ft. Michi-Cal Oil Co.'s Piper 1, se nw se 36-1s-16w, abnd 2587 ft.

MISSOURI

FIRST REPORTS

Jackson County—Hulse's Wiston 1, csl ne nw se 22-49n-32w, dr.

COMPLETIONS

Holt County—Everitt et al's Fred Springs 1, swc se 30-62n-38w, td 2851 ft, acidized 920 gals to loosen pipe, abnd.

NEW MEXICO

COMPLETIONS

Eddy County—George L. Roundey et al's Roundey 1, c se sw 8-23s-26e, elev 3374 ft, top Delaware lime 1490 ft, abnd in salt water 1916-17 ft.

OKLAHOMA

FIRST REPORTS

Cotton County—Dean Brothers' Emery 1, nec 30-3s-13w, derrick.

Payne County—Blackwell Oil & Gas Co.'s Davis 1, sec 24-18n-1e, dr.

COMPLETIONS

Ellis County—Enterprize Drilling Co.'s Wahl 1-A, se nw nw 1-19n-25w, abnd 750 ft.

Kiowa County—Russell Tarr et al's Watkins 1, swc nw 20-7n-17w, 5 mi ne Hobart, top lime 1022 ft, td 1055½ ft, completed 1500-2000 bbls.

Logan County—Cooper Drilling Co.'s Miller 1, nwc se 4-17n-4w, s Lovell pool, top Layton 5019 ft, abnd 5044 ft.

Noble County—Shell's Mosena 1, c w½ w½ se 9-21n-2e, 1½ mi se Sumner, top first Wilcox 4456 ft, top second Wilcox 4519 ft, abnd 4533 ft.

Pottawatomie County—Alma Oil Co.'s Johnson 1, sw nw sw 19-6n-5e, n Gray pool, top Earlsboro 2890 ft, top Wilcox 3990 ft, top second Wilcox 4025 ft, pb 3019 ft, completed 110 bbls. O'Mara et al's Townsend 1, nw sw sw 28-6n-5e, e Gray pool, top Dense 3870 ft, top Dolomite 3905 ft, abnd 4088 ft.

EAST TEXAS

FIRST REPORTS

Shelby County—Paul Pewitt et al's G. H. Hanson 1 (35-ac), Ann Gray sur, moving in materials (1½ mi sw of Joaquin field production, 5200 ft test).

Falls County—R. D. Salisbury et al's W. M. Shankle 1, 150 ft out of most northerly ne cor of 226-ac tr, J. A. Manchaca sur, 1½ mi ne Chilton, rig.

Henderson County—Harry Hines and W. E. Howard (was J. C. Jones and Mallory's) R. Mallory 1, 2100 ft fr e and 2560 ft fr n lines tr, Tom S. Mitchell sur, elev 304 ft, rur, td 107 ft.

Hunt County—Westmount Oil Co.'s A. J. Stevens 1, 420 ft fr s and 652 ft fr e lines of tr and M. L. Terry sur, 1½ miles w of Celeste, rur for deep test.

Smith County—The Texas Co.'s A. A. Scritchfield 1, 660 ft out of nwc of 50-ac tr, David Page sur, A-16, or 1800 ft out of nec of survey, between Flint and Bullard, mim for 6500-ft test.

COMPLETIONS

Kaufman County—Sam Knoerr et al's J. P. Hunter 1, 6000 ft fr ne and 900 ft fr nw lines of P. Walker sur, 4½ mi se Terrell, elev 477 ft, Austin chalk 2030-2295 ft, top Woodbine sand 2986 ft, abnd 3006 ft. H. W. McGee et al's Gen'l American Life Insurance Co. 1, 5000 ft fr n and 500 ft fr e lines of John Baker sur, 6 mi w Mabank, elev 317 ft, Austin chalk 2118-2590 ft, top Woodbine sand 3070 ft, td 3093 ft, tested 25 to 50 bbls fluid daily, est 2 percent black heavy oil, abnd.

NORTH TEXAS

FIRST REPORTS

Archer County—D. C. Edwards et al's Sallie Hutcheson 1, 150 ft fr n and 1369 ft fr w lines sec 142, H. S. of C. R. sur, 2½ mi n Archer City, lcn.

Clay County—Nixon Bros. & Dutton's Mrs. W. M. Tammen 1, 1330 ft fr e and 150 ft fr s lines sec 4, Cherokee C.S.L. sur, A-81, lcn for 1500-ft test.

Wilbarger County—Pois & Schluz et al's Carl Griggisberg 1, 150 ft fr e and 1050 ft fr n lines e½ ne¼ BS&F sur, sec 13, A-1309, 4½ mi sw Lockett, spd for 1900-ft test.

COMPLETIONS

Clay County—E. N. Costley et al's C. T. Taylor 1-B, 150 ft fr ne and 1906 ft fr se lines of blk 41, Bacon subdivision, abnd 1406 ft.

Cooke County—Pois & Schulz et al's E. A. Felker 1, 2180 ft fr n and 1020 ft fr w lines of J. Taylor sur, A-1044 ft, abnd 1756 ft.

Jack County—Holbrook & Woods' R. A. McDonald 1, 150 ft out of nec S.P. Ry. sec 1, A-583, abnd 475 ft.

Wichita County—Bridwell Oil Co.'s Willis 1-B, 2020 ft fr s and 150 ft fr e lines of tract, W. H. Anderson sur, A-1, abnd 1600 ft.

TEXAS GULF COAST

FIRST REPORTS

Harris County—Selby Oil Co.'s East Texas Oil Co. 1, Sheldon area, 3300 ft s of n line and 1870 ft e of w line of 8480-ac tract, Victor Blanco sur, lcn.

Colorado County—Strake's Burford Estate 1, Columbus area, 250 ft e of e line of H. Ward 10-ac tract and 422 ft n of s line of Burford tract in E. Tumlinson sur, lcn.

Ft. Bend County—Superior's Kelso 1, Long Point area, 320 ft fr nw line and 380 ft fr sw line of 80-ac tract, H&TC No. 10, lcn.

Wharton County — Texas Co.'s Peters 1, Danevang area, 660 ft fr s and w line of s½ of se¼ of sec 101 of ET RR sur, lcn.

COMPLETIONS

Chambers County—Jack Frazier et al's Frost 1, ne of Seabreeze, 1400 ft fr s line and 900 ft fr e line of H&TB No. 97, abnd 8954 ft.

Ft. Bend County—N. W. Hunter's Settegast 1, Clodine area, 530 ft fr n line and 410 ft fr e line of 20-ac tract in E. P. Whitehead sur, abnd 7712 ft.

Trinity County—C. E. McAlpine et al's Dilley 1, n of Trinity, 900 ft w of e line and 600 ft n of s line of J. Grissett sur, abnd 2386 ft.

Chambers County—Plymouth's Wilborn 1, Robertson Lake area, 1172 ft s and 1165 ft e of NWc of 1168-acre tract, W. Moore sur, abnd 9586 ft.

Fort Bend County—Superior's Beard 1, Long Point area, E. & T. R.R. sur, No. 111, 330 ft ne of sw line and 2465 ft se of nw line of sur, abnd sdtr hole 7947 ft.

Harris County—Coastal Development Co.'s Sweeney 1, Ogburn area, 1068 ft fr e line and 707 ft fr s line of 69.5-acre tract, J. C. Ogburn sur, abnd 7505 ft. H. H. Given's Adoue 2, 5200 ft s and 200 ft w of NEc of D. Middleton sur, abnd 2690 ft.

TEXAS PANHANDLE

COMPLETIONS

Moore County—Shamrock O&G Corp.'s S. A. Crabb 1, center H&TC sec 410, blk 44, elev 3697 ft, water sand 3579-92 ft, show gas 3660-70 ft, water zone 3740-50 ft, abnd 3782 ft.

SOUTH TEXAS

FIRST REPORTS

Bastrop County—Ralph R. Ogden's Wolf 1 (WC), 330 ft ne line, 990 ft se line of 165-ac tr, in Samuel Wofenbarger sur, dr 327 ft.

Duval County—Clark and Cowden Drilling Corp.'s Gruy Estate 1, 990 ft s line, 990 ft w line of N. Gussett sur No. 28, lcn. South Coast Oil Co. and Roeser and Pendleton, Inc.'s Garcia 1, 330 ft s line, 990 ft e line of s½ of sw¼ of sec 311, H&GN sur, Ab-306, lcn.

Webb County—H. K. Boysen and Brian Jones' Watkins 4, 1570 ft s line, 2970 ft e line of sec 11, San Casimero "Valentine de las Fuentes" gr, dst of sand showed oil and mud, no details, drilling plugs 790 ft.

Zapata County—Martinez & Condren's Bruni 1, 330 ft sw line, 330 ft se line of blk 23, Jose V. Borrege "Glas Uribe" gr, lcn.

Zavala County—H. F. Wilcox Oil & Gas Co.'s Kincaid 1, 330 ft s line, 650 ft e line of W. D. Kincaid sur 374½, skidding on.

COMPLETIONS

Atascosa County—Raymond Pulliam and Joe L. Dickson's Henke 2, 150 ft sw line, 525 ft se line of 120-ac tr, A. S. Donavan sur 145, abnd 662 ft.

Bastrop County—Marts and Beavens, Inc.'s Woods Heirs 1, 1050 ft w line, 2160 ft s line of tr, Dennis Dykes sur, top Austin chalk 2483 ft, base Austin chalk 2882 ft, abnd 3265 ft.

Caldwell County—Adams and Lyles' Campbell 1, 190 ft ne line, 150 ft se line of 182-ac tr, Gideon Pace sur, abnd 1801 ft.

Edwards County—O. C. Reynolds' Turney 2, 150 ft w line, 450 ft s line of 160-ac lse, sec 164, CCSD and RGNG sur, blk A, sand 411-16 ft, temp abnd 416 ft.

Jackson County—Moore & Ahern and Cron & Gracey's Drushel 1, 285 ft ne at rt/ang fr Navidad River, 330 ft n and 330 ft w of se cor of 40-ac lse, Patrick Scott sur, Ab-69, gas-distillate 5505-8 ft.

Jim Hogg County—Imperial Oil Co.'s Gutierrez 1, 330 ft s line, 330 ft e line of blk 1, H. Rodriquez sur 142, temp abnd 950 ft.

Jim Wells County—Smith & Story, Inc.'s Shaffer 1, 330 ft s line and 330 ft e line of Stanley Welch sur 90, Ab-523, abnd 2354 ft.

Kendall County—H. T. Crist and W. S. White's Schoenewolf 1, 180 ft w line, 5325 ft n line, W. F. Wilson sur 2, replacement hole for No. 1, junked, temp abnd 150 ft. C. M. Dewey's Seidensticker 2, 330 ft s of Comfort-Sisterdale road, 1425 ft e line of R. Davis sur 20, temp abnd 725 ft.

Lavaca County—Walter L. Goldston's Turk 1, 660 ft s line, 660 ft e line of 1095-ac tr, G. W. Edwards sur, top Wilcox 8209 ft, abnd 8507 ft.

Lee County—Steve Panos et al's Sanders 1 (WC), 330 ft s line and 200 ft e line of 12-ac tr, J. Von Roeder sur, top Austin chalk 3664 ft, top Buda 3843 ft, top Edwards 4602 ft, temp abnd 4627 ft.

McMullen County—Edwin M. Jones' Ezzell 96, 330 ft s line, 330 ft w line of sec 4, Ezzell Ranch subd, estimated 20 bbls per day on pump, 1537 ft.

Nueces County—Shield Oil Co.'s Potter 1, 474 ft n line, 697 ft w line of blk 10, George H. Paul's subd, of Driscoll Ranch, Joaqin Lopez de Herrera gr, Ab-606, top first Volcanic 3045 ft, top Heterostegina 4040 ft, top salt water 5379 ft, sand 5548-61 ft, sand 5561-62 ft, shale oil odor 5562-82 ft, flowing 2 bbls per hr through 5/64-inch choke, 940 pounds tubing and 660 pounds casing pressure, td 7089 ft.

Starr County—Herbert Aid's Morenes 1, 150 ft n'ly s line, 150 ft e'ly e line of share 19, porc 70, Jurisdiction of Carmargo, abnd 765 ft.

Travis County—F. H. Floyd's Glass 1, 330 ft most n'ly n line and 150 ft e line of 667-ac lse, J. Gilliland sur, temp abnd 1028 ft. G. C. Richardson's Perry 1, 225 ft e line, 3494 ft n line of 170-ac lse, of A. C. Caldwell sur, top Austin chalk 916 ft, abnd 930 ft.

Victoria County—George E. Smith's Marhiljohnni 1, in blk 5 sub of Louisa Silar, R. Manchola gr, Ab-87, abnd 2935 ft.

Webb County—W. W. Harvey and H. H. Henderson's Benavides 3, 330 ft s line, 2687 ft e line of sur 459, top Mirando 2468 ft, broken sand 2468-82 ft, abnd 2482 ft.

Williamson County—W. O. Caffey's Seggern 1, 1720 ft se line and 1400 ft ne line of Hardy Pace sur, top Austin chalk 890 ft, abnd 1130 ft.

Zavala County—H. F. Wilcox Oil & Gas Co.'s Gilliam 5, 316 ft n line, 466 ft e line of s½ of sec 12, blk 2-A GWT and T RR sur, top Carrizo 560 ft, top Midway 1350 ft, top Navarro 1550 ft, top Taylor 2210 ft, top Chalk 3120 ft, top Eagleford 3540 ft, top Buda 3690 ft, top Del Rio 3790 ft, top Georgetown 3870 ft, top Edwards 3950 ft, abnd 3995 ft.

WEST TEXAS

FIRST REPORTS

Stonewall County—Lester Clark et al's M. R. Neatherly-Shell 1, se se ne H&TC sec 21, blk D, cem surface pipe.

Terrell County—E. M. Thomasson Prod. Co.'s F. C. Bates 1, 1800 ft fr n line (Pecos River bank) and 330 ft fr e line H&GN sec 31, blk 1, lcn.

COMPLETIONS

Pecos County—Clayton W. Williams et al's H. J. Eaton 1, 330 ft fr n and 610 ft fr e lines sec 1, blk 203, J. H. Handy sur, 3 mi w by n of Fort Stockton, elev 2966 ft, top Rustler lime 1445 ft, abnd with hfw 3062 ft.

Tom Green County—Dave Elder, H. Nolen and Geo. Adkins' J. H. DeLong 1, 330 ft fr n and 1680 ft fr e sec 83, blk 1, Jas. Webb sur, abnd 555 ft.

WEST CENTRAL TEXAS

FIRST REPORTS

Erath County—J. F. Morrissey & Co.'s R. J. Sikes 1, 320 ft fr nw and 2320 ft fr ne lines of J. Hargrove sur, 6 miles nw of Stephenville, sp on 5000-ft test.

COMPLETIONS

Brown County—D. Hartzel et al's Browning 1, C. Messer sur, sub-div No. 3, abnd 815 ft.

Stephens County—Lone Star Gas Co.'s O'Connor 1, sec 51, blk 7, T&P Ry sur, elev 1431 ft, top Ellenberger 4186 ft, abnd in sul w 4241 ft.

WYOMING

FIRST REPORTS

Hot Springs County—J. W. Bales' Government 1, w nw se 21-41n-90w, spd 70 ft with cable tools. Location in Lysite Mountain district, 4 miles southeast Black Mountain field.

Fuhrman allowable cut

The allowable for Fuhrman field, Andrews County, was reduced to 2037 barrels effective July 29 under an order issued last week by the Texas Railroad Commission. An earlier order had raised the field allowable to 5000 barrels.

Just Published...

A Source Book in Geology

By KIRTLEY F. MATHER, Professor of Geology, Harvard University, and SHIRLEY L. MASON, Geologist. 702 pages, illustrated $5.00

This new book gives a comprehensive view of the development of geological science during the last four centuries, by presenting the significant passages from writings of the great contributors to that science in the past.

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NOTES FOR THE Equipment Buyer and User

Welding Electrodes

PAGE STEEL & WIRE DIVISION

Four new welding electrodes called Page Surface Saving Electrodes have been added to the line manufactured by Page Steel & Wire Division of the American Chain & Cable Company, Inc., Monessen, Pennsylvania.

These electrodes are alloyed to meet the demand for tough abrasion resisting materials for the original surface maintenance and repair of metal parts subject to excessive wear.

Page Surface Saving Electrodes all inter-alloy with the base metal when applied by the metallic arc method, thus forming a truly welded bond. Four different electrodes are available, each having physical and chemical characteristics suiting them for particular needs.

A comprehensive booklet is available from the manufacturer.

Cutting Torch

MODERN ENGINEERING COMPANY

Modern Engineering Company, 3423 Pine Boulevard, St. Louis, Missouri, manufactures the Meco Cutmaster Cutting Torch. It is of 3-tube construction with tubes of monel metal for maximum heat resistance as well as structural strength. All other parts are of forged and extruded metals.

A patented head mixer is claimed to provide a perfect mix of preheating gases and allows for easy cleaning to eliminate overheating. The connection of tip to head is also of patented construction and eliminates leakage dangers both between high-pressure passageways into the preheating passage as well as open leaks that endanger the operator.

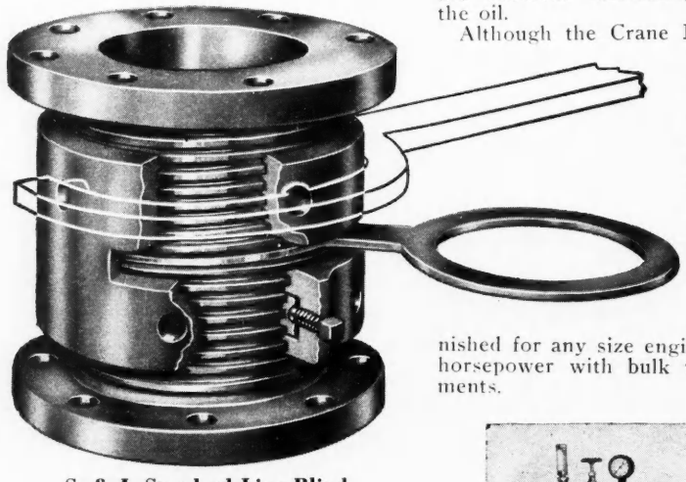
The high-pressure oxygen valve is controlled by a long lever, mounted on top, and, because of the leverage the pressure required to operate the valve is negligible. A thumb-operated locking device is conveniently placed at the end of the control lever. An additional factor to minimize fatigue in prolonged operation is the perfect balance built into the torch.

The needle valves are equipped with tension springs. These provide for automatic take-up against wear and assure accuracy of adjustment even if torch is accidentally dropped. All other moving parts, as well as the threaded connections and seats at the tip, are designed to permit adjustment to take up for normal wear without replacement.

Line Blind

SHAND AND JURS COMPANY

Shand and Jurs Company of Berkeley, California, announces the addition to its line of the S & J Standard Line Blind. This is a positive shut-off blind which can be changed by one man in less than a minute. A spanner wrench



S. & J. Standard Line Blind

is used on the center jack sleeve to break the line, the spectacle is changed and the spanner jacks the line positively tight again against the spectacle. The spectacle is grooved for gasket material to do away with loose gaskets.

These blinds may be obtained in 4-, 6-, 8-, and 10-inch sizes of any material to suit service conditions. They are made with standard gate valve flange dimensions.

Oil Purifier

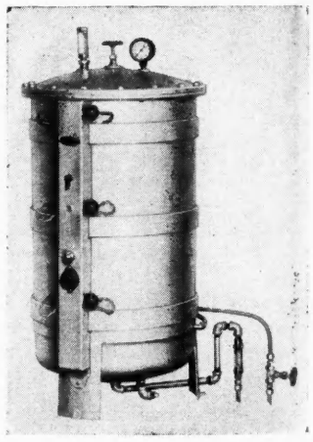
MIDCO TOOL & SUPPLY COMPANY

The Crane Refiner, distributed by Midco Tool & Supply Company, Oklahoma City, Oklahoma, is designed to insure longer life for engines by providing a continuous supply of fresh clean oil through a new scientific method of purification.

This method embodies a combination of elements known as Cranite. A peculiar quality possessed by this material enables it to restore color to oil. It also has an affinity for all accumulations of soluble and solid non-lubricants and removes them, improving the inherent lubricating qualities of the oil.

Although the Crane Refiner is new to the oil industry, it has been used commercially for many years in Diesel engines, marine engines, ice plants and many other types of power equipment.

This refiner can be furnished for any size engine, up to 2500-horsepower with bulk type refill elements.



Crane Refiner

Casing Bridge Plug

ROE MANUFACTURING COMPANY

A high-pressure, drillable casing bridge plug is offered by Roe Manufacturing Company, Oklahoma City, Oklahoma, for high-pressure squeeze cementing jobs. Salient feature of its construction is the combination of cast iron and either rubber or neoprene to afford an easily drillable plug that will

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Around a high pressure well the Christmas tree valve is literally boss of the works. And, being boss, it has to stay on the job. The well won't wait for a spare to be put on.

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Our technical book, "Molybdenum in Oil Production", gives further information about the various Molybdenum steels used in oil drilling and pumping equipment. It is free to interested executives and engineers.

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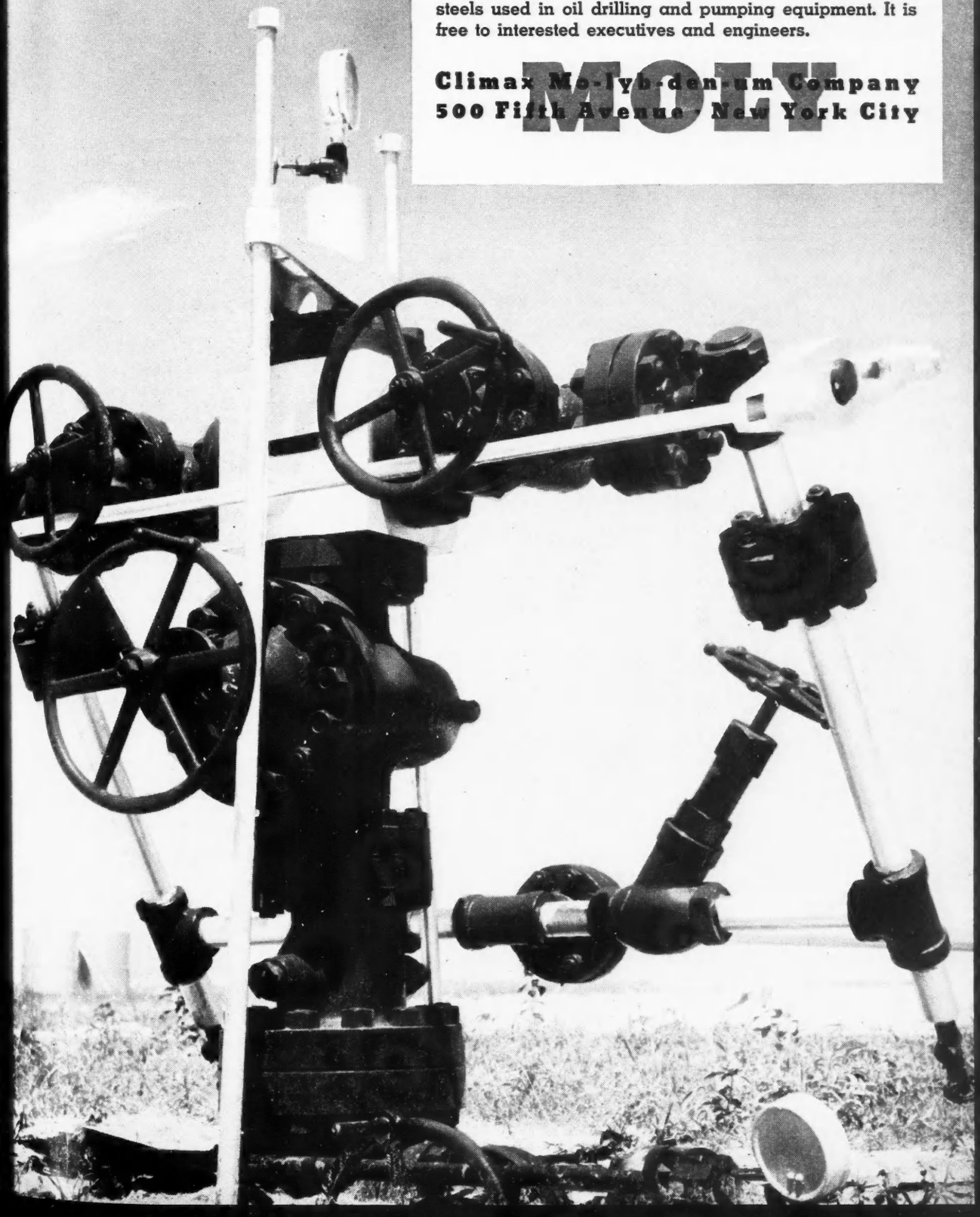
MOLY



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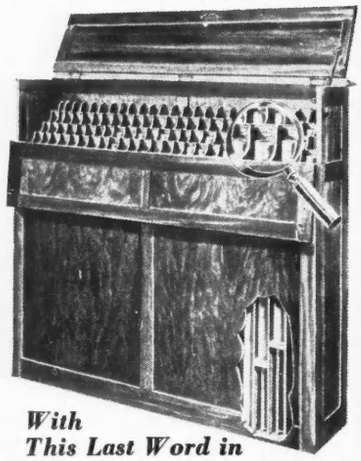

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NOTES FOR THE Equipment Buyer and User

not lock in and rotate with the bit. The plug is run into the hole on a wire line and set by a heavy spring that is then withdrawn. Makers assert that the plug cannot be accidentally miss-set and that when properly set the plug provides a perfect seal against pressures as high as 7500 pounds acting against either end.

The use of a wire line to place the plug cuts time required for the operation down to approximately an hour.

General Well Service to Work Over Wells in Gulf Coast

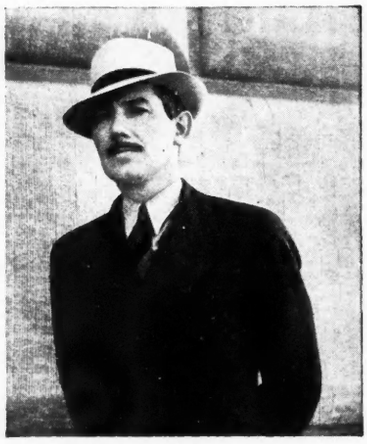
General Well Service, Inc., has recently been organized for the purpose of working over oil wells in the Gulf Coastal region of Texas and Louisiana with offices in Houston. Clay Johnson, Jr., formerly an oil operator of Fort Worth, is president and treasurer, and Ray W. Richmond, long identified with the production business in Texas and Louisiana, is secretary and field superintendent.

Cornelius to Represent Kobe in East Texas

Announcement of appointment of Paul D. Cornelius to the staff of the Mid-Continent division, as sales engineer for Kobe Hydraulic All-Purpose Pumps, just has been made by C. J. Coberly, president of Kobe, Incorporated, Huntington Park, California.

Following service with the Marine Corps during the world war, Cornelius attended the University of Kansas, receiving his B.S.M.E. degree in 1923. After graduation he joined the San Francisco office of Sullivan Machinery Company, being advanced to the St. Louis offices four years later, in which positions he was engaged in sales and engineering work. In 1933 he was made manager of the Pumphead Division.

While working out of the Mid-Continent Division offices at Oklahoma City under the direction of Division Manager C. M. Rader, Cornelius will make his headquarters at Kilgore, Texas.



PAUL D. CORNELIUS

McEvoy Company Adds Six Regional Men to Sales Forces

The McEvoy Company, Houston, since reorganization has added six salesmen to its sales force.

J. B. Durkee will contact supply houses at Tulsa, Dallas, Shreveport and San Antonio. B. G. Johnson will serve the trade around Houston. G. S. Watson, Jr., is located in the West Texas field. J. L. (Slim) Hickman has headquarters in Victoria and will contact the South Texas trade. Fred Henslee is located in Louisiana, while Hiram Grantham handles the company's water-well equipment.

Peerless Pump Representative Stationed at Oklahoma City

Hal S. Kern, hydraulic engineer, for many years associated with the Peerless Pump Division of the Food Machinery Corporation in Los Angeles, has been transferred to Oklahoma City to personally supervise installation of Peerless Pumps in refineries and on leases. Kern will make his headquarters at The Shuler Company in Oklahoma City.

Threading Machines

Landis Machine Company, Waynesboro, Pennsylvania, has published Bulletin No. H-75-4 describing and illustrating thread-cutting machinery and special attachments and appurtenances for fast and efficient threading.

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NOTES FOR THE Equipment Buyer and User

Fletcher Advanced to General Manager of Hughes Tool Company

On August 14, the board of directors of Hughes Tool Company announced appointment of H. W. Fletcher as vice president and general manager to succeed the late Stanley P. Brown.

Fletcher has been chief engineer of the company for the past 22 years. He was born in Brooklyn, New York, 48 years ago and graduated with honors from Cornell University in the class of 1915.

Fletcher's selection to head Hughes Tool Company was made on the recommendation of Howard Hughes, Jr.

H. W. FLETCHER
Becomes Vice President and General Manager of Hughes Tool Company.

M. O. Johnston Acquires Osgood Sub-Surface Pressure Service

M. O. Johnston Oil Tools, Inc., Los Angeles, California, has recently acquired the Sub-Surface Pressure Survey Service previously conducted by Commander W. H. Osgood, former retired naval officer who has been recalled to active duty. It is planned to expand this service and maintain the standard of accuracy associated with this service under Commander Osgood.

The Johnston Bottom Hole Pressure Recorder which is run in conjunction with the Johnston Formation Tester, obtains the first possible record of pressures in a newly exposed sand in a drilling well. The Sub-Surface Pressure Survey Service offers the operator a means of continuing that pressure record after the well's completion by periodic runs throughout its economic life. Instruments are available for use in flowing, gas-lift, or pumping wells.

According to a company announcement, new instruments are in course of development in Johnston's laboratory and will be added to this service from time to time. One of these will serve as a check on the depth pressure record obtained on each run to insure maximum accuracy of results. Others, which will serve to measure various physical properties of well fluids, will be announced in the near future.

General Electric Advances G. R. Prout and W. T. Darcy

G. R. Prout has been appointed manager of sales of industrial control, and W. T. Darcy has been appointed manager of sales of renewal parts, according to a recent announcement by W. C. Yates, manager of the control and renewal parts division of General Electric's Industrial Department. The appointments are effective as of September 1, 1939.

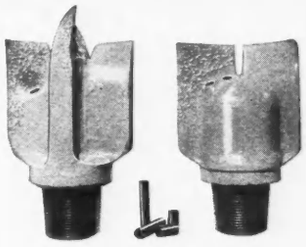
Prout, who until his recent appointment has been acting manager of the southwestern district for the company's Industrial Department, is a native of Quincy, Massachusetts. He is a graduate of Massachusetts Institute of Technology with degrees of B.S. and M.S. in electrical engineering. He entered General Electric's small motor department at Lynn, Massachusetts, in 1923 and the following year was transferred to the company's southwestern district. During his 15 years there, he has served as a motor and industrial control specialist, as well as specialist in electric equipment for the petroleum industry. In February, 1939, he was appointed acting manager of the Industrial Department in the southwestern district, a position he held until his most recent advancement. His new headquarters will be Schenectady, New York.

Darcy is a native of Bridgeport, Connecticut. He went with General Electric in July, 1925, joining the testing department in Schenectady. After 2½ years of this training, he was transferred to the renewal parts section of the industrial department and, since that time, he has continued in this particular type of work. From May, 1928, to April, 1934, he was temporarily located at various of the company's plants, including Bloomfield, Schenectady, and River Works at West Lynn, as well as the Cleveland office. He returned to Schenectady in 1934 and since last year has served as assistant to W. C. Yates in charge of renewal parts sales.

Martin-Decker Appoints New Mid-Continent Salesman

Martin-Decker Corporation, Long Beach, California, has announced that Dave Waters, formerly with Reed Roller Bit Company at Shreveport, Louisiana, has been appointed sales-

World Famous
BREWSTER BITS



Drillers around the world are profiting by Brewster's 35 years experience by insisting on Brewster Drag Bits. Their toughness and endurance are unexcelled. Made with 2, 3, 4, and 6 blades, threaded either BOX or PIN. All of them are forged. All cutting edges set with Hard Metal Inserts and faced with Tube Borium. Water courses fitted with Hard Metal tubes. Be sure and get our quotations before you drill that next well.

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MacClatchie Wearever Piston Rods are made of the finest selected ball race steel, hardened and ground to a mirror finish. They are available in a wide range of sizes and tapers for all pumps. We strongly recommend the MacClatchie Special Taper Rod, which has just the right amount of taper to hold the piston under the highest pressure, yet sufficient contact surface to prevent it from pushing into the piston body.

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NOTES FOR THE Equipment Buyer and User

DAVE WATERS
Selling for Martin-Decker in Mid-Continent Territory

man for Martin-Decker products in Illinois, Kansas and Oklahoma.

Waters is a graduate of the University of Alabama, has had four years field experience with Humble Oil & Refining Company, and for two and a half years has been a member of Reed Roller Bit Company sales staff at Shreveport. He is now at Martin-Decker's main plant at Long Beach, learning about the design, assembly and operation of Martin-Decker oil field instruments, and expects to be located in his new territory in a few weeks.

Joys Resigns as Vice President of A. O. Smith Corporation

Carl Joys, Jr., vice president and director of A. O. Smith Corporation, announced his resignation, effective September 1, after a connection since August 1, 1924, when the company entered the oil-field market with electric welded pressure vessels. He has been directing the sales of all the company's products for this market ever since. He became a director of the corporation in 1927 and has been a vice president since 1935.

Prior to joining A. O. Smith Corporation, Joys gained oil field experience in California and held various sales positions in executive capacity. He is a native of Milwaukee and a graduate of the University of Wisconsin.

Joys, when asked, stated that he was not at liberty to disclose his future plans at this time. No announcement of a successor has been made by the company, and it is not expected that the position left vacant by Joys' resignation will be filled immediately.

Paul T. Putnam Dies While On Business Trip to Corpus Christi

Paul T. Putnam, advertising and sales manager for Cameron Iron Works, Houston, died August 15 in Corpus Christi while there on a business mission. Burial was at Houston, August 17.

Putnam, who was 45, was born in Whitefish Bay, Wisconsin, and moved to Houston with his family in 1907. After attending Texas University he was on the staff of the Dallas News in 1916 and 17, leaving that connection to attend officers training camp and during the war served as a lieutenant in the 33d Aero squadron. He became identified with the oil industry in 1925 when he joined W-K-M Company, of Houston, to do advertising and sales work, and rose to the position of manager of the specialty division sales. He resigned in 1930 to enter business for himself, representing several manufacturers. In 1934 he joined the sales department of Cameron Iron Works, becoming sales manager late in 1938.

Putnam's two surviving brothers have long been identified with the oil industry; Thad, an export agent, of New York City; and Walter, with Sinclair Prairie Oil Company, at McCamey, Texas.

Water-Lubricated Pump

A new bulletin describing an improved type of water-lubricated pump has just been issued by the Peerless Pump Division of the Food Machinery Corporation, 301 W. Ave. 26, Los Angeles. It is beautifully printed in three colors and shows an interesting cross-section of the entire pump assembly, revealing the flow of water through the bowls and the method of sealing the impellers by a double seal.

No oil is used below the surface in this type of pump and the entire shaft is supported by cutless fluted rubber bearings of exclusive Peerless design. The bearings are rigidly fixed in bronze spiders to eliminate gyration and vibration, according to the manufacturers. The bulletin describes the service of water-lubricated pumps in capacities ranging from a few gallons to more than 10,000 gallons per minute.

General Service Motorpump

A new illustrated broadside, Form 1917, showing construction details of the Ingersoll-Rand Motorpump has just been published by the manufacturer, Ingersoll-Rand Company, 11 Broadway, New York.

This pump, which is designed for all types of general service, is built in sizes for delivery of from 5 to 1000 gallons per minute and heads up to 500 feet. It embodies a unit construction with the pump impeller mounted directly on the shaft of the electric motor drive. The entire unit is enclosed in a housing which requires no baseplate or foundation and may be bolted down for operation in any position.

Squeaks from the Bull Wheel

Easy to Pick Out

"Which of these two men is the bridegroom?"

"The anxious-looking one—the cheerful one is the bride's father."

Not Old Maid

"What is the feminine of bachelor?"

"Er, lady-in-waiting."

Experienced

"Your mistress tells me, Jane, that you wish to leave us to become an attendant at a mental hospital?"

"That's right, sir."

"What experience have you had?"

"Well, sir, I've been here for three years!"

Obviously

"I contend that a married man is always better informed than a single man."

"Naturally. What he doesn't know, his wife tells him."

Indefinite Count

"Johnnie, what did you have for breakfast?"

"Teacher, I et six eggs."

"Why, Johnnie! You should say 'ate'."

"Well, maybe it was eight that I et."

Had Help

"I'm a self-made man."

"You're lucky. I'm the revised work of a wife and three daughters."

Delayed

"You were gone longer on your auto trip than you expected."

"Yes, it took an extra week to fold up the road maps."

Jealous Wife

"When your husband craves a kiss, do you always give it to him?"

"I wish I knew."

Relief Applicant

"I'm sorry, but it's impossible for me to give you three weeks' vacation now.

"Then, perhaps, you could give me a little advance pay so I can send my wife away. I must have some rest!"

Duty

A minister confided to his old friend that he was considering an invitation to another parish at a marked increase in salary.

"What I do not know for sure," he said, "is that this is really a call."

"Call, dominie? It's a command!"

Definition

"Dear, what's the difference between direct and indirect taxes?"

"The same as the difference between your asking me for money and going through my pockets at night when I'm asleep."

Who's Embarrassed?

"Isn't this a stupid party?"

"Yes."

"Why not let me take you home?"

"Sorry—I live here."

Compensation

"Waiter, this is a very small steak."

"Yas, suh, ah spects it is."

"And it's very, very tough."

"Den it's suttingly lucky it's small, ain't it, suh?"

Stenographers' Department

"Howja spell 'sense'?"

"Dollars and cents or horse sense?"

"Well, like in 'I ain't seen him sense'."

Wanted Company

The screwball got out of bed at 2 a. m. He threw a robe over his pajamas and galloped down two flights of stairs to the landlord's apartment.

He rapped sharply. No answer. He knocked again, and again. Finally the door opened. A sleepy-eyed landlord stuck his head out.

"Well," he demanded. "What do you want?"

The nut took a deep breath.

"I just want to inform you," he said, "that I won't be able to pay the rent this month."

The landlord held his head.

"Is that why you woke me up in the middle of the night?" he howled. "Couldn't you tell me that in the morning?"

The screwball nodded.

"Certainly," he admitted. "But why should I worry alone?"

Would Be Nice

"Hard-workin' little wife you've got Bill."

"My word, yes! I only wish I 'ad a cople more like 'er!"

'Nother Pome

There was a young lady from Kent
Who said that she knew what it meant,
When men asked her to dine,
Gave her cocktails and wine,
She knew what it meant—but she went.

Social Service Reports

"Woman and household neat but bare."

"Milk needed for baby and father is unable to supply it."

"Until a year ago this applicant delivered ice and was a man of affairs."

"Man aggressive—has nine children."

"Applicant has one child, Lillian, who is three months old and owes 12 months rent."

"Saw mother and child—evidence of a father."

Hard on the Witness

"Judge, I don't know what to do."

"Why, how's that?"

"Well, I swore to tell the truth, but every time I try, some lawyer objects."

Safe

Tommy was meandering homeward much later than his usual suppertime. A friend of the family who happened to meet him said: "Why, Tommy, aren't you afraid you will be late for supper?"

"Nope," replies Tommy, "I've got the meat."

Something Missing

"Marriage is no good. Jack stopped kissing me right after the ceremony."

"He must be a poor husband."

"Oh, but Jack isn't my husband."

"Pome"

A maiden not lacking in pride
Went out with her beau for a ride.
She said: "Tell me, Joe,
How far do you go?"
"As far as you'll let me!" he cried.

Gotkool
WATER CANS
& COOLERS
GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . . .
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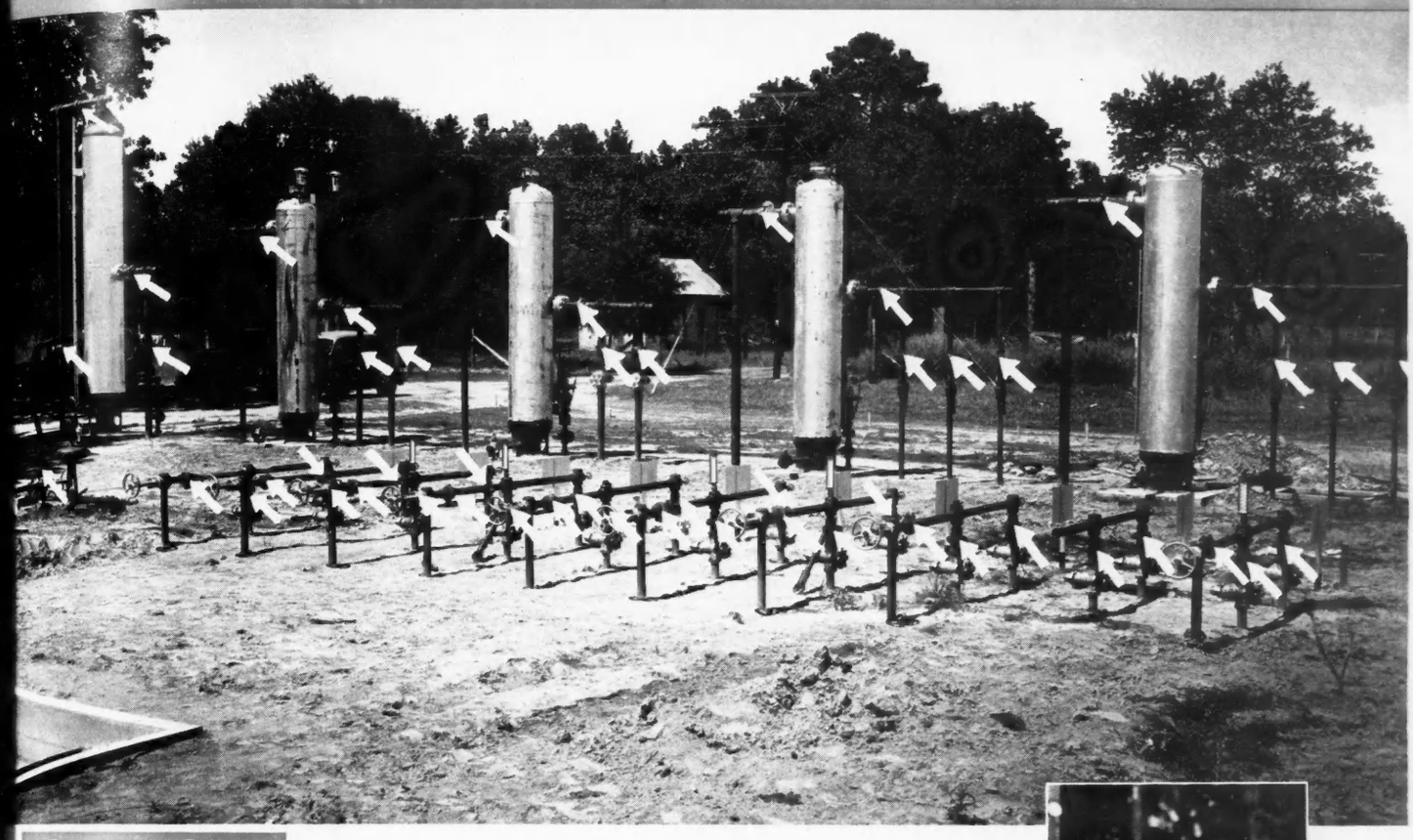
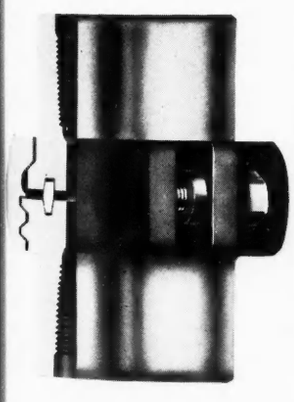


Red-Rex HIGH PRESSURE STEEL UNIONS



1,000 and 3,000 pounds working pressures – tested to 3,000 and 6,000 pounds respectively.

DEWEY BUTTS, manager of H. M. Harrell Re-pressuring Plant near Bammell, Texas.

. . . at the new Re-pressuring plant near Bammell, Texas. This plant, now under construction, is owned by H. M. Harrell, and managed by Dewey Butts.

"There are over 200 quick unions in this plant," says Mr. Butts, "and every one of them is a RED-REX Quick Joint Pipe Union. The speed and ease with which they do their work saves on construction costs. And on a job like this, where pressures are so important, the assurance offered by RED-REX Unions means a lot."

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The OIL WEEKLY

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THE WEEK'S NEWS INTERPRETED

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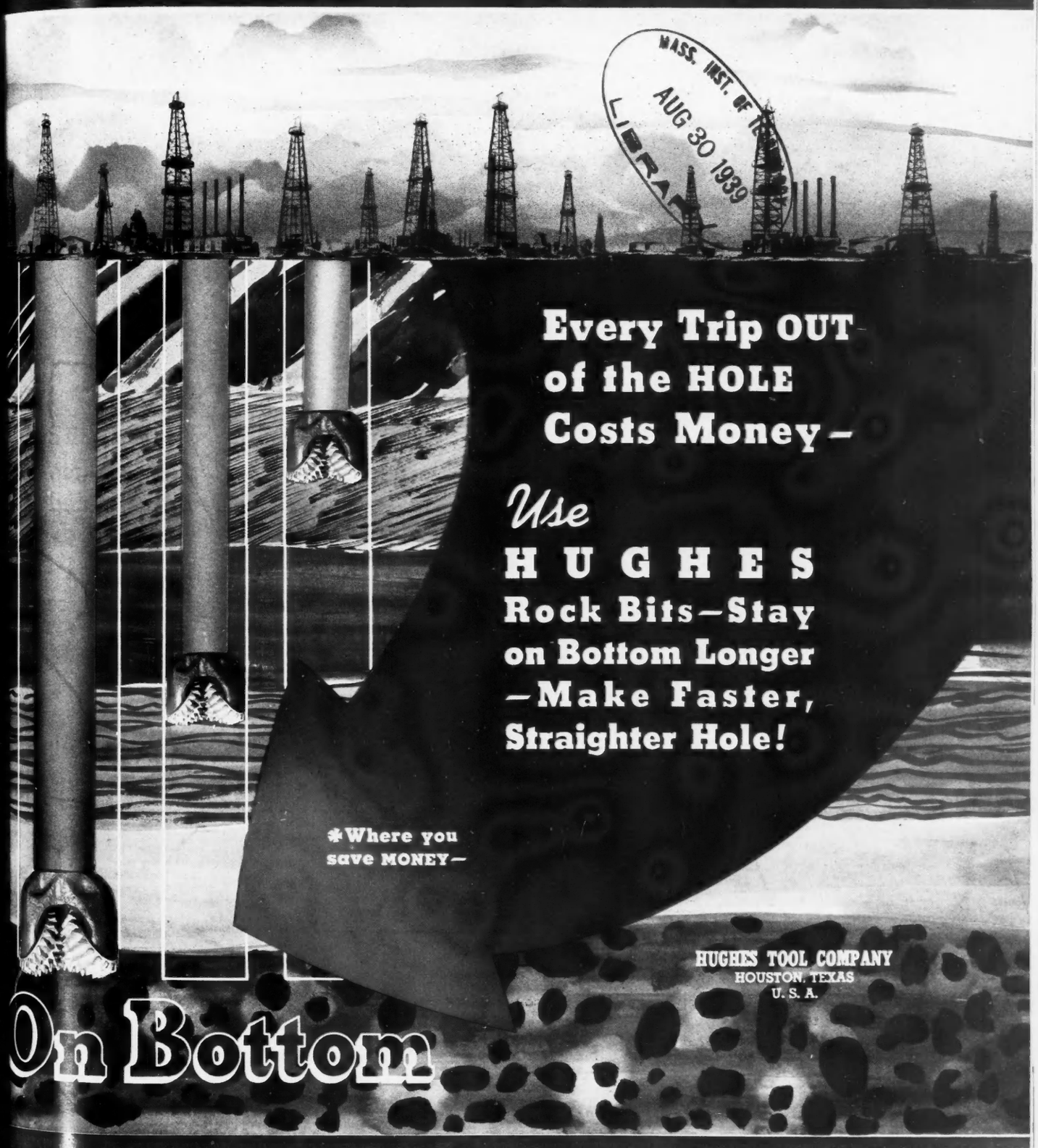
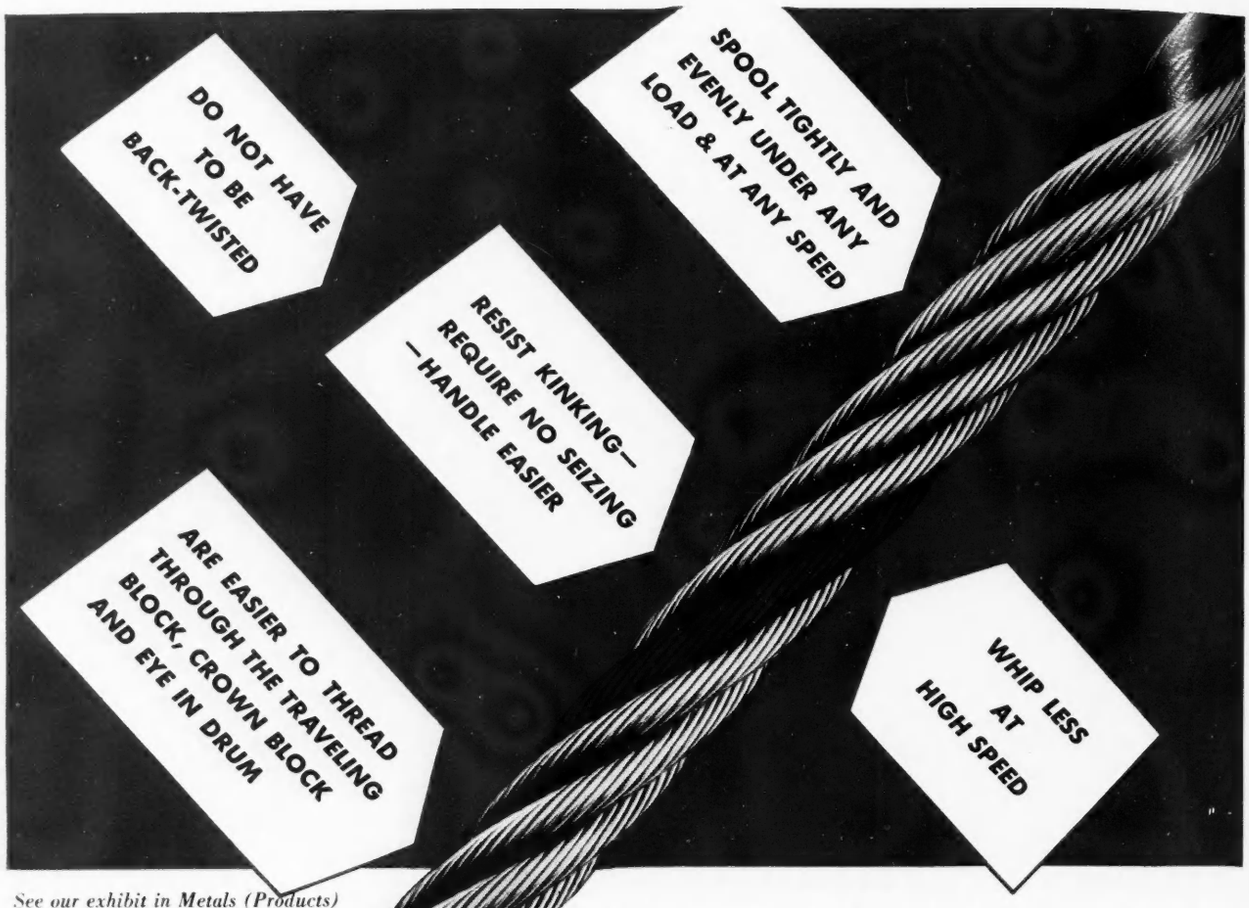


VOLUME 94 AUGUST 28, 1939 NUMBER 12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ARE EASIER TO THREAD THROUGH THE TRAVELING BLOCK, CROWN BLOCK AND EYE IN DRUM
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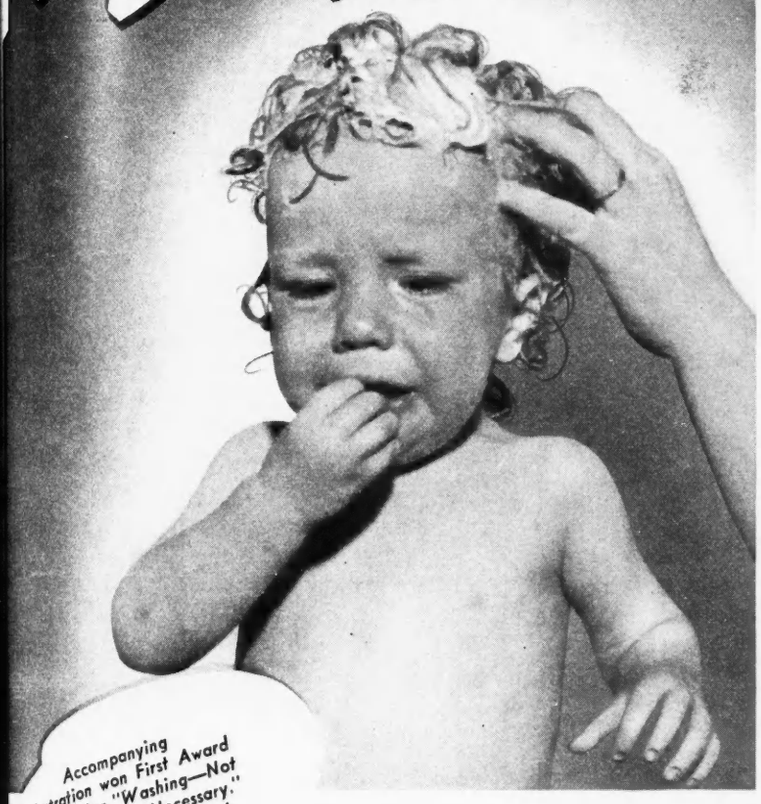
Washing . . .



Accompanying illustration won First Award in the Baker "Washing—Not 'Fun', But Often Necessary." Candid Camera Contest. Congratulations to D. M. Yeaman, 501 Elm St., Ponca City, Oklahoma.

Not "Fun" But Often NECESSARY

As illustrated, there comes a time when it is "necessary"—even though it may not exactly be classed as "fun"—to do a little plain and fancy WASHING.

Under somewhat different circumstances, the necessity of performing a "Washing" operation also frequently arises in landing casing in an oil well, particularly when bridges or other formation obstructions are encountered . . . and that is where the Baker Cement Wash-Down Whirler Float Shoe comes in.

FIG. 1 BAKER CEMENT WASH-DOWN WHIRLER FLOAT SHOE

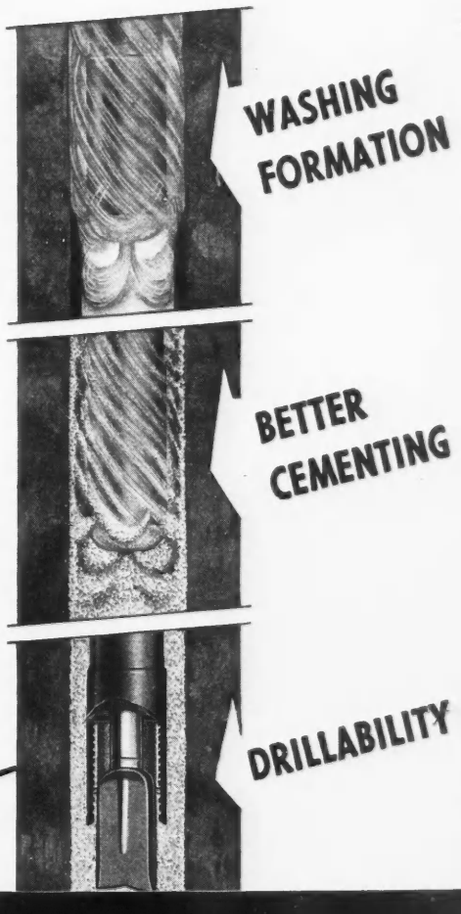
THIS SHOE was designed especially to facilitate the running of casing in a hole where bridges are likely to be encountered. As shown in Fig. 1, the Shoe is provided with a number of baffled side ports and when the fluid passes through these ports it is diverted as it leaves the shoe, in a downward and slightly lateral direction to provide a down-whirler action that is so highly advantageous. This hydraulicking or downward jetting action of the fluid washes away the sides of the bridge and the formation thus removed is readily circulated up the hole. At the same time that the bridge is disintegrated and washed away, the pipe is lowered through a free hole without danger of being stuck.

IN ADDITION . . . To Facilitate the Landing of Casing, the Baker Cement Wash-Down Whirler Float Shoe affords these important advantages:

1. Washes the formation to condition the hole preparatory to cementing.
2. Whirls the cement around the Shoe and up and around the casing, minimizing any tendency to channel.
3. The BALL-TYPE Valve and internal construction of Bakelite and Concrete provides, in perfect balance, the important features of STRENGTH, VALVE EFFICIENCY and DRILLABILITY.

The Wash-Down Whirler Principle is also Available in a Guide Shoe
(The Baker Cement Wash-Down Whirler Guide Shoe)

SEE THE BAKER SECTION OF YOUR COMPOSITE CATALOG



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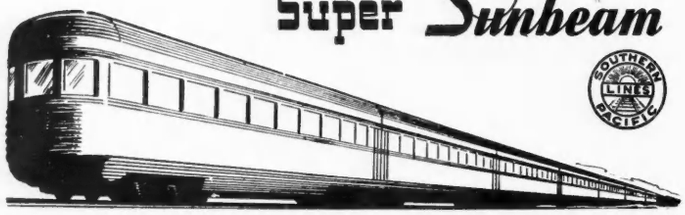
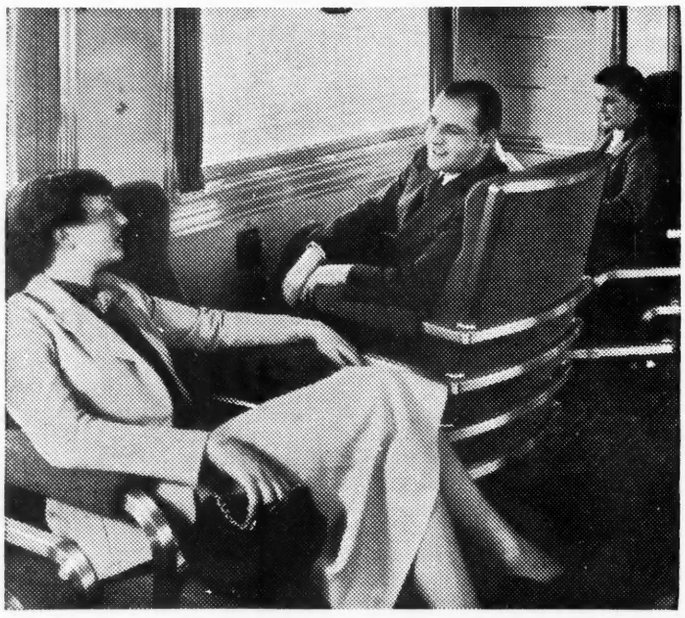


Roomy, Luxurious PARLOR CAR



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LOOKING AHEAD

WITH THE EDITOR

What Does It Cost to Find a Barrel of Oil?

WITH new and important economic factors confronting the industry today, oil in the future must make a closer study of the various influences that contribute to its success or failure.

One of the most important questions concerns the relationship of the volume of oil discovered to expenditures. At the present value of oil is a sufficient quantity being found to repay exploratory costs?

Recognition of this as one of the numerous significant economic subjects which oil must of necessity decide, so as to determine its course of activity in the future, has prompted one of THE OIL WEEKLY's staff writers to prepare a tabulated comparison of United States reserves found per foot drilled, per dollar drilling expense and per well drilled over the past four years.

Several striking conclusions are revealed in his study, foremost among which is that a sufficient quantity of oil is being found per dollar, per foot and per well to provide the industry a handsome profit, but that slow rates of investment return whittle the imposing figure down to a probable actual earning of very small proportions.

This interesting article, which sets forth details by states, is to appear in an early issue.

The OIL WEEKLY, Published every Monday. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

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Production Equip. Co., Los Angeles, Calif.
Superior Iron Works & Supply Co., Inc. Shreveport, Louisiana Oil Field Points; Magnolia, Ark., Houston, Texas
The Western Drilling Tool & Supply Co. Chanute, Kansas
Western Supply Co., Oklahoma City, Oklahoma; Dallas, Greggton, Texas
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From the approved hot rolled wire rods thru Macwhyte's furnaces, cleaning, baking, cold drawing of wire, and fabrication of wire into wire line—at every step of the way Macwhyte Wire Lines are made to make good.

ASK FOR A MACWHYTE WIRE LINE RECOMMENDATION

IT'S LABORATORY TESTED . . . Not just ordinary, routine tests, but *exacting, severe* tests . . . many of them . . . are given all Macwhyte lines. Which means that when they're given a "final OK" at the mills, Macwhyte Wire Lines are ready for dependable, economical service.

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NO. 426-B

MACWHYTE COMPANY
KENOSHA, WISCONSIN
Manufacturers of wire lines and braided wire rope slings . . New York . . Chicago . . Pittsburgh . . Ft. Worth . . Portland . . Seattle . . San Francisco . . (Distributors throughout the oil fields.)

MACWHYTE
Whyte Strand - PREformed **WIRE LINES**

Great Pioneers

ILLINOIS, 1803

In July, 1803, Captain Whistler built the first Fort Dearborn, which Indians destroyed in the 1812 massacre. Shortly thereafter public lands, secretly guarding "Black Gold" treasure, sold for $1.25 per acre. In 1818 the "Prairie State," governed under two territorial acts and three constitutions, was admitted to the Union. Here, again, a dauntless pioneer spirit has played the leading role in developing what is now one of the nation's richest oil producing, agricultural and industrial areas.

● NO OPPORTUNITY to pattern after others presented itself to those farsighted individuals who developed the "Prairie State." They were pioneers—they were first—preparing the way for others to follow.

Likewise, there was no opportunity to follow others when, in 1932, Dowell developed Inhibited Acidizing. Since then Dowell has made many other important contributions to the industry—every one the result of pioneering leadership—every one exclusive with Dowell. And although Dowell's contributions have been copied feverishly and frantically, Dowell, in research and accomplishment, retains this pioneering leadership.

One of Dowell's most recent and important pioneering efforts resulted in the development of a de-emulsifying acid, trade-named Dowell "XW". Three characteristics identify "XW": (1) it increases wettability of the acid on oil soaked rock; (2) reduces tendency of either the acid or spent acid to form emulsions with the oil; (3) reduces the surface tension of both the acid and the spent acid solutions.

As these facts become more generally known, ever increasing numbers of operators are availing themselves of Dowell products and services. The results are greater production ct less cost and a continuation of this pioneering leadership so vital to the industry.

DOWELL INCORPORATED

General Office: KENNEDY BUILDING, TULSA, OKLAHOMA

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Oil men who attend the Golden Gate International Exposition are cordially invited to visit the Dowell exhibit in The Dow Chemical Company booth.

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